JoyStik

T.M.

HOW TO WIN AT VIDEO GAMES

Conquering the Most Devious Foes of XEVIOUS

Fantastic New Strategies for STAR TREK

PLUS:

Taking the Lead at **POLE POSITION**

Scoring Big at **POPEYE**

Winning Big Bucks in Contests

Taking Aim at Atari

And Lots More

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Early in 1982, Eugene Jarvis (designer of Defender, Stargate, and Robotron) told me, "It looks like video games are becoming a fad, and that scares me. I mean, look at what happened to disco. I think that games should just be something that everybody does but nobody talks about."

In the ensuing year, Eugene's worst fears became reality. Video games began showing up in bars, gas stations, and restaurants. "Pac-Man Fever" was a hit single, and "wanna see my Pac-Man pattern?" edged out "come here often?" as the least imaginative come-on of the year. After video games were featured on the cover of almost every major news magazine, several new publications (*JoyStik*, for example) sprung up to answer the needs of the game-playing public. People weren't just talking about games—they were reading about them, writing about them, and living, breathing, and playing them all around the country.

Well, that was last year. This year, as any arcade owner will tell you, business is down. Millions of people still play every day, but the rampant rise in video games' popularity between 1980 and 1982 is over, never to be repeated again. Does this mean that video games will soon go the way of CB radios and hula hoops? Was the media blitz of 1982 the worst thing that could have happened to the game industry? Would we all be better off if games were still something that everybody plays but nobody talks about?

No—the video game industry has finally matured, and it never would have happened without all of the hype. Two years ago, most people thought video games meant either Asteroids or Space Invaders. Now, even a nonplayer can usually rattle off the names of a dozen current games, and terms like maze game, microprocessor, track ball, and raster-scan have worked their way into the common American vocabulary. All of the trend-trackers and fad-followers unwittingly educated the public about the world of video gaming, and we here at *JoyStik* appreciate their help.

Knowing that our readers are already well-schooled in video game fundamentals, we can turn our attention to the specific types of information that can't be found anywhere else. The Winning Edge (on page 36 of this issue, featuring Ms. Pac-Man) is an excellent example of this. You already know how to play the game, but we can show you how to play even better. The strategy pieces on Raiders of the Lost Ark and Star Trek (pages 22 and 28) also reflect this no-nonsense approach. We don't waste your time pointing out how the games tie in with the movies they're based on—we just help you become a better player by giving you solid, specific, and verified game strategies.

The fad is over, Eugene, and video games will never be something "that nobody talks about." Even as you read these lines, a player in a nearby arcade is probably saying, "You know, I read in the latest issue of *JoyStik* that...."

Doug Mahugh

Doug Mahugh, Managing Editor

Which player's score is about to take flight?

Quick, figure it out. Here comes Phoenix* from Atari.

Duck. Here comes Phoenix. The famous arcade sensation that's now a home sensation. And it's only from Atari for use with the ATARI® 2600™ and Sears Video Arcade† systems.

This is a spectacular arcade replica. With four waves of awesome warbirds. Flapping wings that grow back seconds after you shoot them off. And even a forcefield.

But in Phoenix you can't just wing it. You can't shoot like the player on the left. Because he'll get only 100 points for a bird high in the sky. While the player on the right will shoot the same bird low in the sky for 500 points. And a feather in his cap.

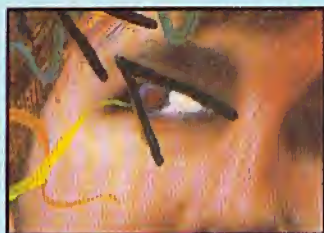So whether you aim high or low, aim to get Phoenix home. Any other idea is for the birds.

ATARI

PHOENIX

ATARI

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LETTERS

HIGH-SCORE PICTURES

Congratulations on a fine magazine — there aren't many video game magazines that cover a wide selection of issues like you do. I would like to know how to take a picture of a high score on a television, and since you did a good job of taking a picture of ColecoVision Donkey Kong (page 62 of the January '83 issue), I thought I might ask you. Also, I noticed that you have a high score chart for arcade games and I was wondering if you have any plans for a home game high score chart.

Dean Odice
Bridgeport, CT

We've been planning on adding home games to the Charts section for some time now, but we want to take the time to do it right. Home game scores are harder to verify than arcade game scores, so we're trying to set up a simple and accurate procedure for registering scores. If all goes well, we'll start carrying home game scores in the next issue.
We referred your question about taking a picture of a television screen to our photographers, and they gave these suggestions:
• Use either print film or daylight slide film.
• Make the room as dark as possible.
• Use a tripod or hold your camera against a stable surface like a tabletop.
• Get as close to the screen as possible.
• If your camera has variable shutter speeds, set it to 1/15 of a second.

• If your camera has variable f-stops, take several shots with different settings. Taking more than one shot also helps you avoid the horizontal blanking bar, which shows up as a dark line across the screen.

RECOGNIZERS RECOGNIZED

In your January '83 issue, Richard Ross gave strategies for Tron. Tron is my favorite game, and the strategies were very helpful, but I found one mistake. Under Wave 5, it talks about red tanks. These are not tanks at all, they don't even resemble tanks. They are called recognizers, and it clearly states this on the game.

Steve Pendrak
Jamesville, NY

Thanks for pointing out the error, Steve. Although many players (Richard Ross included) call them red tanks, their real name is recognizers.
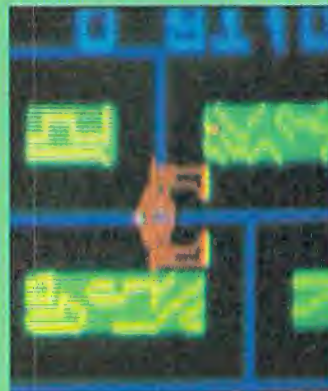
THE 3RD ELEVATOR IMPASSE

When I read your Donkey Kong strategy, my score went from about 10,000 to 82,500, my new high score. If you have any tips about the third set of elevators, please tell me about them, because they're tough!

Todd Arendt
Gibson, IA

The third set of elevators is indeed difficult. The springese jump very close together, making that last dash to the top platform very risky. In fact, when Donkey Kong first came out many players thought that Nintendo had intentionally made this screen impossible to finish, so that players couldn't have long games.

It is possible to get through the springese, but we haven't heard of a consistent approach yet. We've noticed that every third or fourth springese is delayed a little, so the best strategy would be to start moving towards the ladder just before one of them. But we haven't figured out how to predict exactly which springese will jump last. If any of our readers have found a way around this problem, we'd like to hear about it.

CONFUSING PICTURES

In your article on Donkey Kong, Jr., the pictures of the first screen and the springboard screen both show the player with five extra turns. How is this possible?

Ted Withrow
Lewisburg, OH

In your January '83 issue, you said you have to get 3.6 million to split the screen in Pac-Man, but the picture of a split screen had a score of 76,320! How can that be so?

Mike Johnson
Jacksonville, FL

Ever since our first issue, sharp-eyed readers have been pointing out seeming discrepancies in the score, number of turns, or number of levels shown in strategy screens. Here's the explanation: we shoot many of our strategy screens on location in arcades, and the pictures must be taken while the player stoops down or steps out of the way. Because of this inconvenience for the player, we often change the machine's settings to make it easier to force the game situation we need to depict.

ISSUES AND ANSWERS

I enjoy reading *JoyStik* very much, but I have a few questions that I hope you can answer:
(1) Is there some way that I can purchase back issues of your magazine?
(2) I'm anxious to try out the 9th key patterns for Pac-Man in your April issue, but I have problems getting to the 9th key. The 3rd through 8th keys cause me a lot of problems — especially the 5th key. Do you have any patterns for these early keys?
(3) Do you have any tips on playing the conveyor belt and pie factory screens in Donkey Kong?
(4) Do you have any tips on Centipede?
(5) When playing Ms. Pac-Man, I average between 100,000 and 130,000 points. However, I have problems playing the 4th maze with the double

tunnels. This board prevents me from scoring beyond 132,000 points (my high score). What's your advice?

Ted Artkowsky
Freeport, PA

Did anyone ever tell you that you ask a lot of questions? To answer your first question, yes! You can obtain all the back issues you want by sending us $2.95 and $.75 postage for each copy. The following issues of JoyStik contain articles that pertain to your other four questions: Look in the Sept. '82 "The Winning Edge" for Pac-Man patterns that will take you from the first apple through the 9th key. And if you're still having trouble with Donkey Kong, you'll find complete patterns starting on page 12 of our Nov. '82 issue. As for "tips on Centipede," our Jan. '83

"Winning Edge" contains the proven strategies of world champion Centipede player, Eric Ginner. And finally, you'll be able to improve your Ms. Pac-Man score by turning to the "Winning Edge" of this very issue. Good luck, Ted!

PREPARE TO QUALIFY

I would like to know why the picture of Pole Position in your April issue shows 120 seconds on the screen, when you're only allowed 90 seconds.

Billy Sloan
Woodland, CA

Good question! While the Pole Position in your local arcade is probably set for a maximum driving time of 90 seconds, it can be set for up to 120 seconds. Like most video games, difficulty settings for Pole Position can be changed by the operator. The picture you saw was taken at the Chicago AMOA trade show, where most of the games are set for free play at their easiest level. Look in the "Technocracy" section of this issue for more variables that affect your favorite arcade games.

DEFENDER DOGMA

I have recently become very interested in the arcade game Defender, but I am having difficulty finding any material that will help me to become a better player. Has *JoyStik* written an article about Defender strategy? If so, which issue was it in?

A. Brooks
Salt Lake, UT

Not to worry. Although you are discovering it a little later than most, your plight is a common one. Defender is one of the most complex games ever created. If you're looking for basic strategy to get you started, dig up a copy of our first issue (Sept. '82). It contains complete descriptions of every Defender element and a few good tips on playing. If you've already mastered "the basics" of the game, you'll find comprehensive strategies for "Surviving Free Space" in our Nov. '82 "Winning Edge." And remember: only sissies use Hyperspace!

REACT

Your reaction to *JoyStik* is vital—be it hate mail or strategy, comment or exposition. Let us know what you think. Send letters to:
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AN INTERACTIVE SUMMER

According to Jeff Adams, a spokesman for Sega Electronics, you may actually be playing their interactive video disk game, Astron Belt (previewed in our April issue), sometime this summer. "As far as I know, they're refining the system now," he said.

If you don't recall, Astron Belt is the first video game prototype that successfully blends a video disk motion picture with a computer-generated image.

One unpleasant feature of this game, however, may be its price. "I have a feeling it will probably be a 50¢ game," said Adams. "Something to consider is that we're using completely different hardware setups that increase our production costs," he added.

The way it looks now, we'll be playing interactive video soon enough—but we're gonna' have to pay for it.

QUARTER PORTER

Unless you happen to be one of the few arcade players who can play all day on their first quarter, you're faced with at least one serious problem—how to carry around five pounds of quarters comfortably. Nicoletti Enterprises, out of Newport Beach, CA, may have come up with the

solution to this dilemma. It's called the "Video Coin Holder" or "VCH" and it holds and dispenses up to nine dollars in quarters (that's 36 plays) while attached to your belt. A transparent coin holder that fits into the canvas pouch (pictured here) allows you to easily see how many quarters you have left.

And for arcade games with a flair for style, the VCH comes in six different colors, such as lunar lavender, galactic red, or military camo. Each pouch sells for $7.95. That may seem a little steep, but think of the wear and tear it will save on your pockets.

INTELLIVISION III

When Mattel first came out with the Intellivision system in January of 1980, the only competitive home game units were the Atari VCS and Bally Astrocade. Offering superior graphics and game play over the VCS and Astrocade, Intellivision quickly became a very popular system—particularly among sports-game fanatics.

In the ensuing three years, Mattel has not kept up with other manufacturers in the competitive home game market. ColecoVision and the Atari 5200 are so superior to Intellivision that Intellivision II was already obsolete when it debuted

at last winter's Consumer Electronics Show. So, as if to keep players "tuned in" for a while longer, Mattel gave the press a sneak preview of Intellivision III —a system that even ColecoVision and the 5200 can't compete with.

Intellivision III offers unprecedented graphics and game play, as well as standard features like wireless joysticks, LED display, stereo sound output, and voice synthesis. Options include a VCS cartridge adapter, computer conversion, and an add-on synthesizer keyboard. Six new games will be released with the system: Yogi Bear's Adventures, Treasure of the Yucatan, Air Ace, Grid Shock, Space Siege, and Dark Castle.

The system is scheduled for release this fall, at a price of under $300. And although it will probably be a better system than anything we've seen yet, the real question is: what will Atari and Coleco have come up with by then? We'll keep you posted.

COMPUTER GAMES BY STARPATH

Starpath Corporation (formerly Arcadia), has begun producing games for the Atari 400, 800, and 1200 personal computers. Starpath is best known for their Supercharger, which expands the RAM of the Atari VCS, allowing it to play more-detailed and intricate games.

The company plans to convert several of their current Supercharger games to the home computer, and will

also develop new games specifically for the computer systems. After seeing the stunning games that Starpath has produced for the VCS, we're anxious to see what they'll come up with for the Atari computers. The games are expected to have a list price of $19.95.

...AND ACTIVISION

Activision has also announced plans to release software in 1983 for the Atari line of home computers. According to James Levy, president of Activision, Inc., "We plan to be as significant a factor in the development of home computer software as we have been in the development of video games." With both Starpath and Activision designing computer games, Atari 400, 800, and 1200 owners can count on a wide selection of good games in the near future.

THE LATEST ATARI

Atari has introduced yet another personal computer system, with even more capabilities than the 800. Dubbed the Atari 1200XL, it offers 64K of RAM and 12 user-definable function keys in a sleek polished steel enclosure for $899. The 1200XL accepts programs written for the 400 and 800, so there is plenty of software available immediately.

One of the nicest features of the 1200XL is the help key. It can be used to generate instructions for executing selected programs, and—even more importantly—it can be used to run diagnostic tests on memory and peripherals.

This means that even inexperienced users can trace the cause of many common problems. 256 distinct colors can be generated on a standard TV monitor, and four voices with a 3½ octave range are available for musical effects. A program recorder (which uses standard audio cassettes), 80-column printer, and 40-column printer/plotter are also available.

Numerous subtle differences from the 400 and 800—like one-key cursor controls and keyboard status lights—make the 1200XL an easy system to learn with. Raymond Kassar, Atari chairman, calls it "one of the friendliest computers ever built." From what we've seen of it, we have to agree—if you're intimidated by this machine, you probably don't want a computer at all.

HIGH-QUALITY CONTROLLERS
Wico Corporation, the leading manufacturer of parts and accessories for arcade games, is now producing controllers for home game systems and personal computers. The Command Control line of joysticks and game controls provides arcade-quality game play for the Atari VCS and 5200, Apple II, TRS-80, and many other home systems.

The Command Control Trackball has an optical scanner and built-in microcomputer, and is identical to the trackball used in many arcade games. The Deluxe Joystick offers two independent fire buttons, eight-position movement,

and three interchangeable grips for $44.95. It is compatible with the Atari VCS, Atari 400 and 800, and Commodore VIC-20 and VIC-64. Wico now offers a total of 15 different controllers for home game systems.

AQUARIUS COMPUTER
The Mattel Aquarius home computer system may be just the thing for home game players who want to get into personal computing. With a suggested retail price of under $200 for the basic unit, Aquarius offers built-in Microsoft Basic, LOGO cartridges, and options like a thermal printer and hand-held game controllers. Best of all, many popular Intellivision games will be available in Aquarius format: Astrosmash, Snafu, Tron Deadly Discs, Intellivision Football, Lock 'n' Chase, and Advanced Dungeons and Dragons. The games can be played with either the keyboard or detachable hand controllers.

Accessories for the Aquarius include a data recorder, thermal printer, mini expander module, and master expander module. The mini expander module allows simultaneous use of both a game cartridge and a memory expander cartridge. The master expander module (available later this year) will provide ports for the addition of up to eight peripherals.

IMAGIC GAMES
Imagic has ambitious plans for 1983, releasing a total of 17 games in the first six months of the year. This

total includes eight new Intellivision games, four new Atari games, and five new versions of previous Imagic games.

The new titles for Intellivision are Ice Trek, Dragonfire, Swords & Serpents, Dracula, Tropical Troubles, White Water, Safecracker, and Truckin'. New Atari games include Dragonfire, Shooting Gallery, Argos, and Sky Patrol.

The other five games are new versions of Demon Attack and Atlantis, two of Imagic's most popular cartridges. Both games were previously available for Intellivision and the Atari VCS; now they'll also be available to Magnavox Odyssey and Atari 400/800 owners. Additionally, a version of Demon Attack has been released for the Commodore VIC-20. According to Brian Dougherty, Imagic's vice president of engineering, "Demon Attack has the most spectacular graphics ever produced for the VIC-20."

TABLETOP ARCADE
Coleco has released three more games in their popular tabletop arcade series: Ms. Pac-Man, Donkey Kong, Jr., and Zaxxon. All three stand about 9" high and operate on four "C" batteries. Pac-Man, Galaxian, Donkey Kong, and Frogger, the first four games in the series, were all released last year.

COLECO'S "SUPER" NEW MODULE
Available late this summer from Coleco is a revolutionary add-on module. Called the "Super Game

Module" (Expansion Module #3 in their series), it doesn't use a memory-limited ROM cartridge for games. Instead, a tiny wafer tape cassette—a little larger than a micro-cassette, but only 3/16-inch thick—slips into the module. More sophisticated games can be divided into several sections
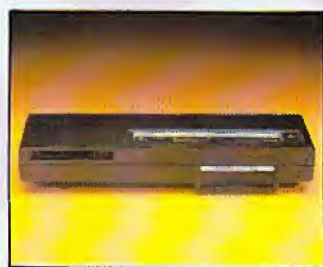
which are automatically loaded into the machine as screens change. The module will retail for around $125, including one game wafer.

A Super Donkey Kong wafer, recently previewed at a national Toy Fair, is indeed "super." If you're familiar with the arcade original, you'll marvel at all four screens, plus the amusing intermissions, such as Kong's abduction of the girl after the Ramp screen, or the collapse of the structure when Mario pops all the rivets. And the Super Donkey Kong Jr. wafer is equally exciting. Other titles planned for late 1983 include Super Zaxxon, Super Smurf Rescue In Gargamel's Castle, Super Turbo, and Super Sub Roc.

By the way, the wafer tape also records information. At last there is a game that keeps track of the high scores after the unit is turned off!

As for ColecoVision modules in the distant future, look for a computer keyboard around Christmas.

ATARI'S NEWEST CONTROLLERS

Atari is currently stepping up their plug-in offerings for the 2600 with four new controllers that will debut later this year. For young children (ages 3-7), a special "Kid's Controller" transforms joystick movements into pushbutton action. Colorful overlays help the child control motion on the screen in Atari's "Kid's Library" series of educational cartridges (featuring Sesame Street characters) and in another series of kid's games featuring cartoon stars from Walt Disney and the Peanuts gang.

For bigger kids, Atari is releasing a newly styled Pro-Line Controller with knob-type joystick and side fire buttons, a track-ball for games like Centipede, and wireless controllers fashioned around the original joystick design.

"MY FIRST (ATARI) COMPUTER"

The biggest news from Atari these days is a $90 computer keyboard that plugs into the cartridge slot and rests on top of the 2600 console (its final design may differ from the mock-up shown here). It won't be officially announced until June, and is scheduled to become available in the Fall of 1983. "My First Computer," as it will be called, has enhanced memory capacity and its own microprocessor (6502), which together will allow for improved graphics capabilities approaching those of the Atari computer, plus the ability to expand into a more complete computer with as yet unnamed peripherals. Software—most of it available on cassette for loading via a standard player—will feature home management, education, and entertainment applications. And 8K Microsoft BASIC will be standard. Unfortunately, all 10-12 million 2600 owners will have to wait for Fall before making the Atari upgrade.

AMIGA'S JOY BOARD AND TELEPHONE VIDEO

A new company, Amiga, has just announced a platform type controller that you operate while standing on it. The Joy Board incorporates the contacts of an 8-position joystick into the base of the board. Depending on how you lean or throw your weight, the controller responds accordingly. For what use? Amiga is demonstrating the Joy Board with a graphically sparse skiing cartridge of their invention. The view is from the skier's vantage point. Your goal is to slalom down the hill through the gates, leaning left and right. Press your feet forward and you increase the skier's speed. With more substantial graphics, as in ColecoVision's promised skiing cartridge, this could be a real thriller.

You can use the Joy Board for any joystick game, because a jack on the Joy Board lets you plug in a hand controller to activate the fire button. In fact, Amiga is also introducing an unusually comfortable, palm-sized controller with a fire button on both sides and a short but precise joystick. While Joy Boarding from side to side on Demon Attack, you can hold the diminutive controller and fire with one hand.

The same company has also been demonstrating a plug-in module for the 2600 that in some respects functions like Starpath's Supercharger. Amiga's $45 "Power Module" adds RAM to the 2600 and requires loading games from cassette tape. But the most intriguing feature promised for this system is the ability to connect the Power Module to the telephone (via an external modem) so that two players in different locations can play against each other. Of the two games to be supplied with the module, one is just an interactive game, while the other is a 3-D game, complete with special 3-D glasses.

ENTEX KEYBOARD FOR THE 2600

The new Entex 2000 Piggyback Color Computer features a very complete and standard keyboard layout with 70 independent, full-travel keys. It is styled to match the Atari 2600 if positioned directly in front of it. Connection to the 2600 is via the cartridge slot. One of two connectors allows for the addition of software cartridges or a peripheral expansion module. The latter increases RAM capacity from the internal 2K to a healthy 18K. Another 16K module can be added for a total of 34K RAM. And there are connections for a printer, telephone modem, and software cartridges. The first ten cartridges planned for the Piggyback focus primarily on education (spelling, beginning math, algebra, word games) and self-help (speed reading, computer typing). Also scheduled for future release is a disk drive controller to speed data or program storage. The Entex computer, by the way, has been successfully demonstrated on the Atari 2600 adapter for ColecoVision.

ViDEA

TAKING AIM AT ATARI
By Scott Spector

Roger Hector has good reason to smile these days. "We're really having fun," he says easily, "We're all of engineering background and creative background and this is exactly what we like doing. What we have set out to do is to have sort of a fun, creative company that is fun to work at."

So much fun shouldn't be work, but it is, apparently, at Videa — another 'chip spun off the giant block known as Atari. Videa is now forging its own ambitious game ideas in the fiercely competitive coin-op market, which they hope to redefine via a new line of games due out this October.

The amiable, 31-year-old Hector is President of Videa, which he formed just 19 months ago with Ed Rotberg, 32, Vice President of software, and Howard Delman, 31, Vice President of hardware. All three are erstwhile Atari wizards who became sullen with that company's corporate atmosphere and decided to seek their own sunshine in California's Silicon Valley. Atari, however, is just down the street and still casts a large shadow.

Nonetheless, Videa has bolstered its stature considerably by its new position as a company whose assets have been acquired by Chuck E. Cheeze Pizza Time Restaurants, which also embraces Sente Technology, an engineering and manufacturing company that produces the robots and other technological marvels in those restaurants. Chuck E. Cheeze is headed by the grandfather of Atari, Nolan Bushnell. When Bushnell left Atari in 1976, he agreed not to compete with them for a period of seven years. That deal has now expired, and Bushnell is back—with a vengeance.

In this complicated corporate scheme, Videa' is still an independent company, but it commands the impressive resources of Sente for construction of its games which, Hector says, "won't make the competition real happy." Videa is out to be the best — and they're confident they can do it.

Hector and Videa certainly aren't bashful—especially with Bushnell now behind them. The attitude of the following anecdote is telling enough.

When Bushnell founded Atari in 1972, he appropriated the name from the jargon of a Japanese game whose name translates as

"Go." "Atari" is simply the term for a move in which one player surrounds the opponent—much like calling "check" in chess. But if the player who appears surrounded can successfully launch a counterattack, his move is called "Sente."

It's a story that makes Hector laugh with confidence. With the large infusion of capital and entrepreneurial flash Bushnell brings with him — Bushnell even owns the building that Videa occupies — combined with Videa's own highly talented staff, the results could be awesome, or, as Hector says audaciously, "we'll only revolutionize the industry."

They were three of Atari's brightest stars: Hector was a manager of advanced projects; Rotberg was a coin-op supervisor; and Delman, also in coin-op, was the co-inventor of Asteroids. Their aggregate talent realized Battlezone, the frenetic arcade game incorporated by the U.S. Army into its training program. It would be hard to find a better endorsement for any game's realism.

For Hector and his colleagues, however, Atari wasn't any more fun. It had "the spirit of an esprit de corps in the old days back in '75 before the sale [of Atari] to Warner [Communications, in 1976],"

Hector says. "That creative spirit sort of filtered out of the work experience at Atari—at least for us." Breaking out, then, seemed like the only alternative. "We felt we knew how to create that kind of experience here for ourselves and for other people here as well."

But putting together a new company, like a team, isn't easy. Unlike many of the other new companies who have bid for ex-Atari personnel as if they were free agents in baseball, Videa, for the most part, has chosen to take a lower profile by bolstering their roster from a farm system of its own stars.

"I have some real hot shots who aren't from the existing game industry," Hector says. Still, Videa did go into the ex-Atari market and come up with the premier female programmer of Centipede—Donna Bailey. Noting this, Hector tries to give his lineup some perspective: "We've tried to assemble a lot of exceptional talent, and I think we've done it." He also emphasizes that "everyone involved gets to make creative contributions on all the projects that are going on." He quickly adds, "Even my secretary makes sure my head doesn't swell too large."

Even with his easy manner, Hector's expectations — and in turn, Videa's reach

—is nothing if not lofty. "We see ourselves as being a very highly technically skilled and creative group," he says, "that wants to be doing state of the art kinds of games. That's what we're here for, and what we are all about."

Videa is also about making money, and thus Hector is bringing some products to development, including hardware that, he says, "has significantly greater resolution and processing abilities than has been seen; more along the flight simulator kind of experience." His voice then picks up an eager tone. "We feel that we can bring that kind of experience into the world of coin-op games and, with some spinoffs, to the consumer games as well." Hector says, however, that Videa's concentration is on the arcades, where the real fun is.

"The video game, as it exists today, is really quite crude compared to what it can do," Hector says, becoming animated. "I have been involved in a lot of experiences that delve into visual and aural perception and many other forms of stimulation that can be achieved electronically to enhance the same experience."

Certainly Hector can't stop now, and he envisions what the next "step" in video games will be: "It's going to be in areas of greater enhanced sensory stimulation and things like that."

"It isn't exactly like plugging wires into yourself, but there are ways of electronically creating a variety of stimuli," he continues. "That's what will make this particular part of this industry so interesting to work with."

"It really sort of borders on revolutionizing the entire entertainment process to tap into more of the physical person. We're tapping into everything." He's not kidding.

"It isn't exactly like plugging wires into yourself, but there are ways of electronically creating a variety of stimuli."

Videa has also analyzed the comparison of video games to movies. Delman has said he hopes to liken the effects of Videa's games on its challengers with the intangible emotions raised in the viewer who watches battle scenes from George Lucas's film, "The Empire Strikes Back."

It seems appropriate to Hector also, though he believes movies are simply a "passive kind of experience. You sit back in your chair and watch it. Your heart rate will increase and all kinds of different things will happen. But video games have created an interactive experience that demands more from you: your heart rate also increases, your pulse quickens, you perspire, and all that—but now you're working a joystick and moving a ball and a firing button...taking that whole experience a step further; it's something we certainly want to do."

It seems as though they've already done it, but the Videa people are reluctant to talk about it. "You'll see in October," seems to be a stock answer.

Hector is confident, however, that Videa's games will be "different from anything seen before. Our games will be immediately distinctive," he says, suggesting an arresting appearance. "The expectations might be higher than

I might want them to be, but we certainly won't be disappointing."

Part of those "expectations" will no doubt include the incorporation of holography into arcade games. Right now, however, Atari holds "just about the whole process in their hands," says Hector, "though they don't know what to do with it." When he was with Atari, Hector and a colleague purchased a package of patents on holography from a company which had secured them earlier but went into receivership. "It was almost a seamless package," he remembers.

But it won't be long until those patents, by law, reach the public domain, where the market takes control.

Hector is eager for this as well, trying to remain consistent with his earlier claims. "I am personally confident that we are ahead of everybody else," he continues, "and with Sente, we know more about holography than anyone else in the industry."

And Hector isn't looking back, because he doesn't think there's any competition—in the Silicon Valley, in the country, or, say, in Japan. When it was suggested that this attitude implies emasculation of the competition, Hector had a swift reply: "I'm usually not given to overblown statements, but, well, yes."

So it would seem that we'll know little more before October, when Roger Hector's Videa will no doubt make its arcade debut at the AMOA show.
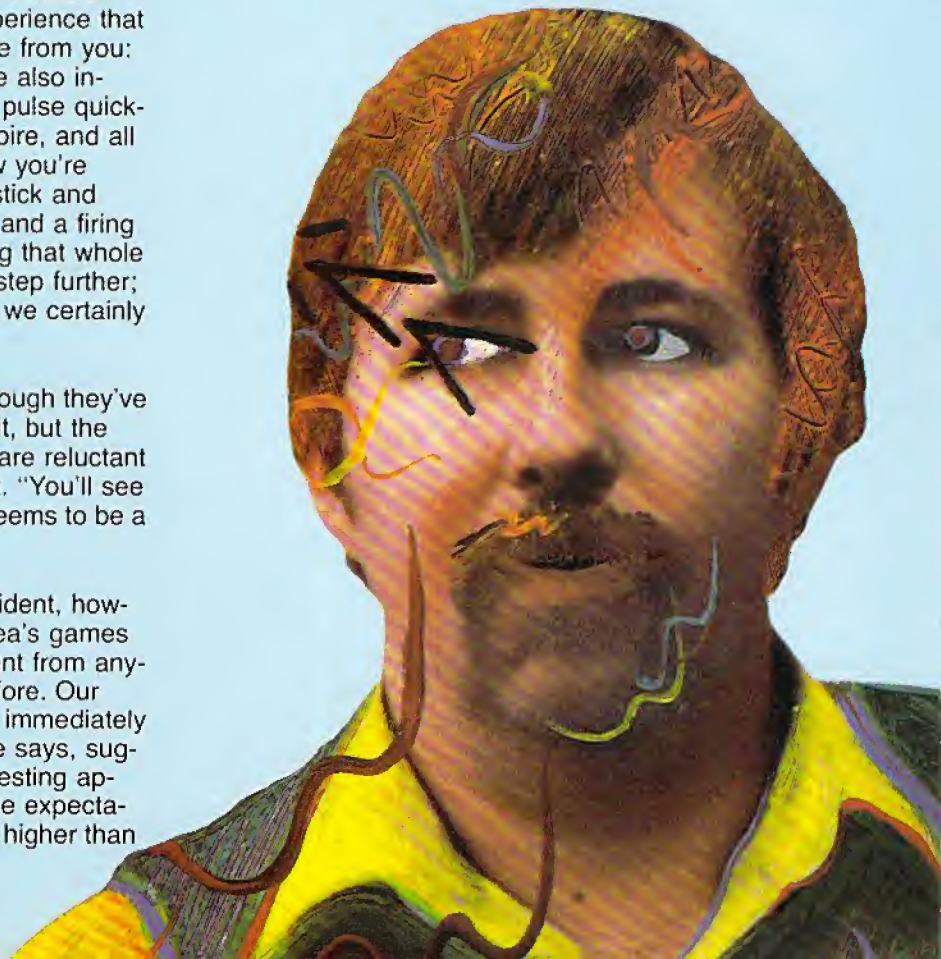
GAME DESIGN GAMBLE PART II: HARDWARE

by Doug Mahugh

What kind of hardware are game designers now using?
How will the latest technologies affect the games you'll be playing next year?
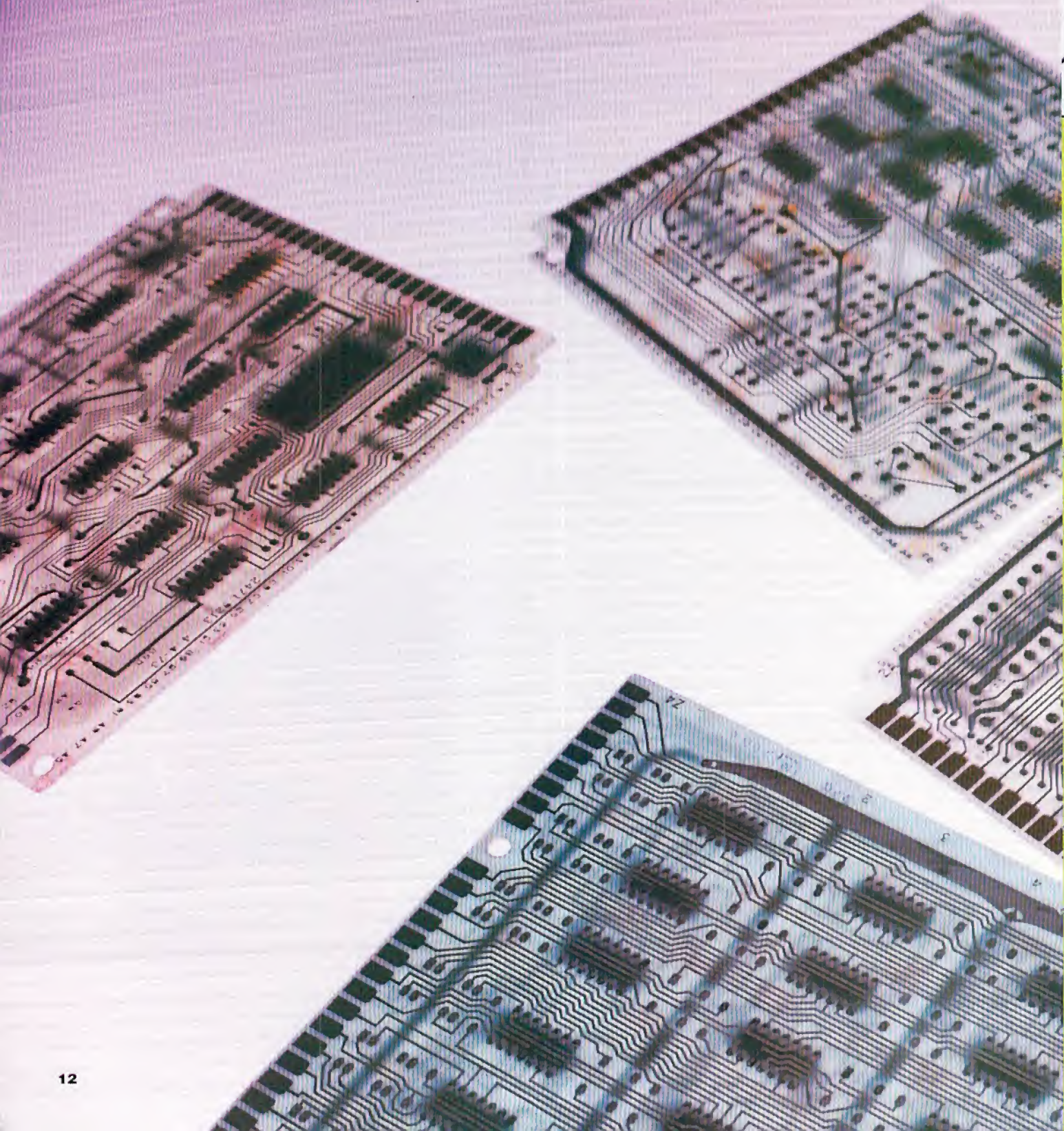
This is the second installment in our three-part series on game design. The first dealt with the game concept and how it evolves in the designer's mind. This time, we're taking a look at the actual hardware used to bring those game concepts to life. Video game hardware hasn't changed significantly since the days of Pong and Space Invaders, and today's more complex games are pushing that hardware to its limits. But recent technological breakthroughs have given game designers the ability to produce almost anything they can conceive.

The actual hardware system used in a video game is "player-transparent"— i.e., you (the player) can't tell the difference between one hardware system and another. Pac-Man and Galaxian, for example, have the same basic hardware structure but appear to be completely different games. Defender and Stargate, on the other hand, are two very similar-looking games that have significant hardware differences. The hardware used, then, is only important to the designer. Players tend to think of games only in terms of the software—the game program itself.

A typical coin-op video game has these major hardware components: a CPU (Central Processing Unit), a monitor (TV screen), a ROM board (where the game program is stored), a sound board, and a power supply. Let's take a look at these components one at a time.

The CPU is the real "brain" of the system. This is where all of the calculations necessary to play the game are carried out. In the past, games have all used 8-bit processors. "8-bit" refers to the amount of information that the processor can handle at one time. Also, in an indirect way, the size of the processor determines the size of the program that can be run. 8-bit processors are very versatile — everything from Pong to Robotron has used one — but many manufacturers want even more power and more capabilities. To achieve this, they're turning toward the use of 16-bit processors. So far, the only game that has used a 16-bit processor is Reactor, which uses the Intel 8088. One look at Reactor's spectacular color animation will show you why game designers are eager to explore the possibilities of 16-bit machines.

The monitor used in a video game determines what kind of images can be shown. There are two basic types of monitors: vector (X-Y) and raster-scan. Vector monitors show images that are drawn with straight lines, while raster-scan monitors show images that are made up of small blocks of color. For more information about monitors — and computer graphics in general — read the "Arcade Art" article in the Nov. '82 issue of *JoyStik*.

The ROM board is the place where the actual game program is stored. The program is read and executed by the CPU one step at a time. To save money, most manufacturers have a standard hardware system that they use for most of their games, and only the ROM board changes from game to game.

The sound board is responsible for generating all of the sounds that the game will use. Usually the sound board contains its own CPU, and acts as a sovereign microcomputer that is triggered by the main CPU. With the increasing use of voice synthesis, sound boards are becoming more and more complicated. Q*bert's sound effects, for example, are generated by a system as sophisticated as an entire game was a few years ago.

The last major hardware component is the power supply. It has a very boring and very important task: it is the heart of the system, supplying electrical power of the proper voltage and current-carrying capacity to all other components.
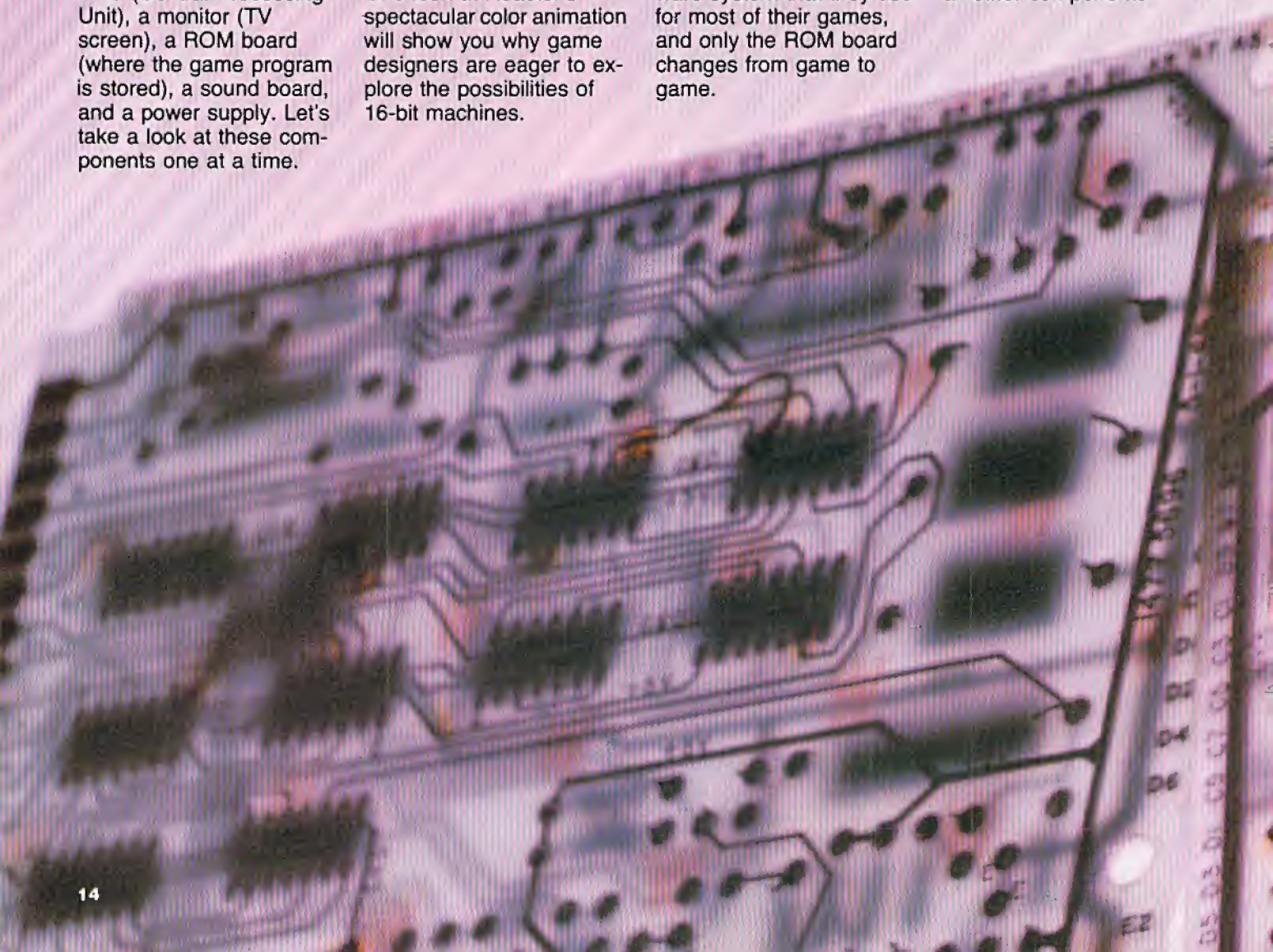
What can we expect in game hardware in the near future? Well, there are many exciting things going on in the labs and offices of game designers, but we think the three new developments that will have the most impact on the video game business are: 16-bit processors, high resolution monitors, and interactive laser disc technology. 16-bit processors, as already explained, will open up a host of new possibilities to the game designer. They will allow designers more freedom than anyone could have dreamed of just a few years ago. High resolution (hi-res) monitors have been around for a while, but have been impractical when driven by 8-bit machines.

Coupled with the processing and addressing powers of a 16-bit processor, hi-res screens will be able to show more detail than will ever be necessary in an interactive game. And finally, there's laser disc technology. We've been keeping up on this new area in our Technocracy section, and it looks like Sega will soon have a laser-disc game out on the market. This should be a landmark development—the ability to control real film footage in a game is mind-boggling.
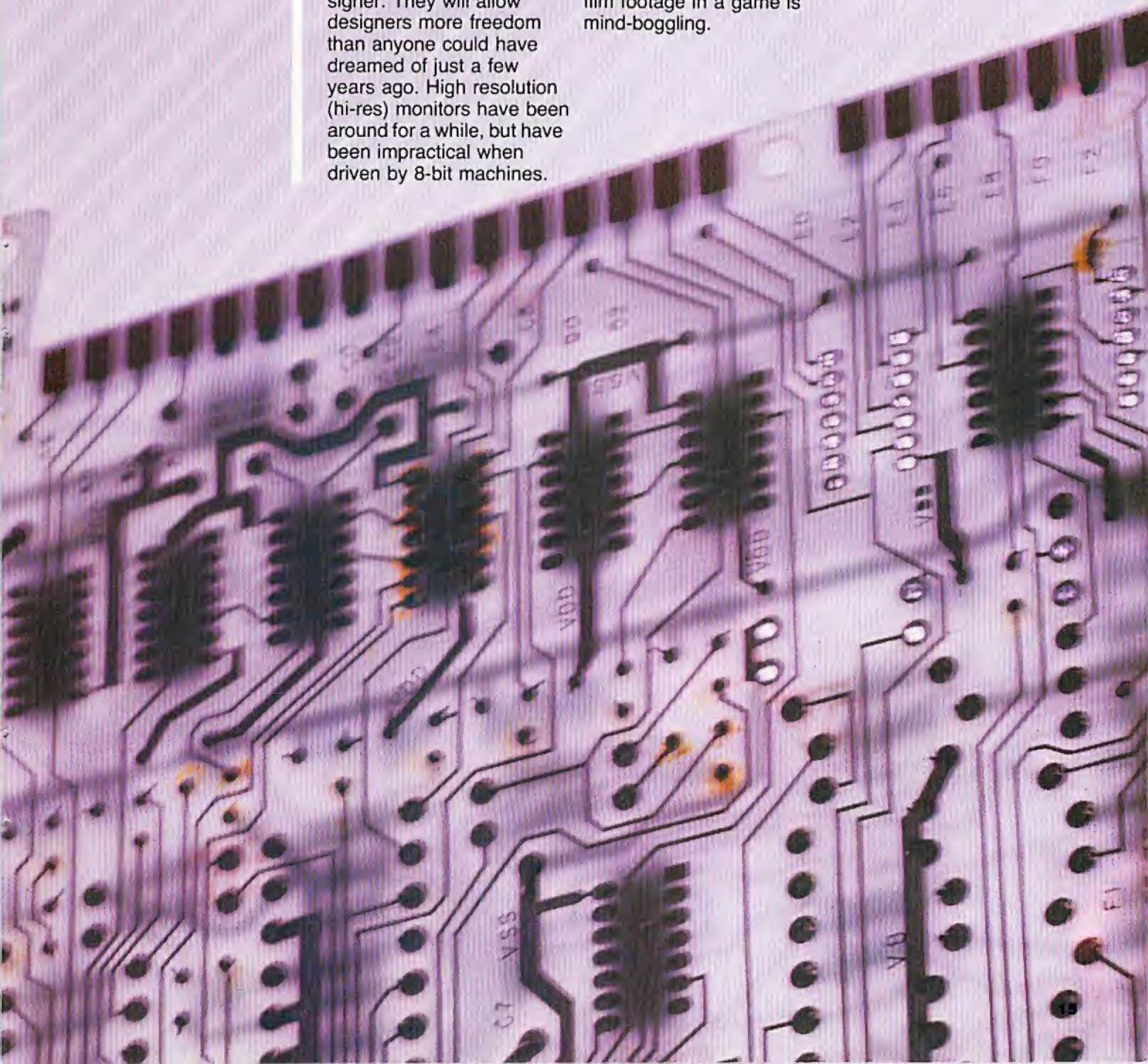
PLAYING TO WIN AT THE SEQUEL GAME by Tad Perry

PAC-MAN

THE PREDICTABLE PREDECESSOR

Are sequel games just a quick and easy way for manufacturers to cash in on a game's popularity? Or are they refined and improved versions of already great games? To answer these questions, we had veteran video pro Tad Perry take a close look at three of the most popular games of all time — Pac-Man, Zaxxon, and Defender — and the sequels they spawned: Ms. Pac-Man, Super Zaxxon, and Stargate. His conclusion — which we happen to agree with — is that Ms. Pac-Man and Stargate are solid games that can stand on their own merit, while Super Zaxxon is simply repackaged Zaxxon. Read on and see if you agree.

Pac-Man was such a huge success — with 96,000 units sold in the U.S. alone — that Bally/Midway has now produced a total of five spin-off games. And that doesn't even include the countless bootleg machines that are being produced by other companies. Of all these Pac-Man relatives, the biggest success has been Ms. Pac-Man — the 2nd-largest selling game in the U.S. (after Pac-Man itself), and the most successful sequel game of all time.

An easy 1600 on the first maze.

Chasing down a ghost on the second maze.

The third maze.

MS. PAC-MAN

THE FINICKY FOLLOW-UP

Very few changes were made in the basic Pac-Man idea to produce Ms. Pac-Man. But the changes that were made have only generated more interest in the game. To Pac-Man players, the most important difference is that patterns cannot be used in Ms. Pac-Man. Blinky and Pinky take random paths during the first five seconds of each screen, so no pattern can be consistently safe. A particular start may appear to work well most of the time because Blinky and Pinky are off in left field, but there is always a chance that one of them will turn in front of you or be uncomfortably close.

Ms. Pac-Man is less tiring to the eye than Pac-Man. The mazes come in pastel colors and Ms. Pac-Man herself is more personalized with her lipstick, eyeshadow, and ribbon. The intermissions are also more detailed and entertaining. The third intermission is the best of all—Pac-Man, Junior brought in by a stork to the expectant parents.

There are four different mazes in Ms. Pac-Man, rather than just one. This gives beginning players something new to look forward to—you never know what's beyond the next screen until you get there. And having four different mazes prevents players from becoming so good at one maze that they don't even need patterns.

Another new feature of Ms. Pac-Man is that the fruit is not stationary—it comes in one of the tunnels and moves clockwise around the center of the maze. If not eaten, it will tromp right back out after a while. The value of the fruit increases steadily from a 100-point cherry to a 5000-point banana, and from then on the fruits appear randomly.

Pac-Man Junior, being delivered by a stork.

The fourth maze, with a tempting 5000-point banana.

ZAXXON

With Super Zaxxon, Zaxxon has been given a new coat of paint, but that's about it. The graphics are much more colorful, and enemy turrets and fuel tanks have been redesigned. But everything is in the same place as before on both the first and second asteroids, so any patterns that you may have used on Zaxxon will work on Super Zaxxon.

A major difference between the two games is that the player's ship moves faster in Super Zaxxon than in Zaxxon, requiring faster reaction time. This aspect of the game results in a quick end to the first few games for beginners as well as former Zaxxon players.

At the end of the first asteroid comes the only original addition to Super Zaxxon. Rather than flying up and over a wall to face enemy fighters in space, the player must enter a tunnel. While in the tunnel, upward mobility is restricted to the lowest two levels, and placed in your path are the old fighters from Zaxxon and new mines that will try to move in front of you.

With the great increase in speed and the restricted mobility of the player, this point in the game is the most unfair to the player. It is very difficult, though not impossible, to survive. If all the fighters and mines within the tunnel are destroyed, a 2,000 point bonus is awarded.

The first asteroid.

The tunnel.

Battling tunnel fighters.

The second asteroid.

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SUPER ZAXXON

ENTER THE DRAGON

Wait here for the Dragon.

Shoot him in the mouth...

for a fiery explosion.

Dodge the missiles.

At the end of the tunnel, the player enters space and must fly up over a wall to defend the second asteroid. As mentioned earlier, this asteroid has the same layout as the second asteroid of Zaxxon. And at the end of the 2nd asteroid, the 1000-point Zaxxon robot has been replaced by a fire-breathing Dragon. If you destroy the Dragon by shooting it in the mouth six times before it tries to fry you, you'll get 2000 points. Otherwise, all that you'll get is 500 points.

After the 2nd asteroid in Zaxxon, the player returns to the beginning of the first asteroid to try it all again with a slightly faster fuel consumption and restricted openings in the walls. But in Super Zaxxon, you have to face the Dragon a total of three times. This could add up to as much as 6,000 points and may seem like a waste of time. It is, because you need enough fuel to survive three attacks. At later stages, facing the Dragon three times is just a cheap way of killing off the player's ship without giving him or her the chance to get any more fuel.

Super Zaxxon is a good looking game, but the unfair aspects of the game play severely limit its chances of becoming as big a success as Zaxxon was.

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DEFENDER

In Defender Stargate, the original ideas of Defender are still intact, yet just about everything has been made more complicated in an effort to challenge the player's abilities. Although many Defender players claim that the subtleties which drew them to playing Defender are lost in Stargate's flashiness, Stargate has a large and loyal following of its own.

The game play is essentially the same as Defender: attempt to save as many humanoids as possible, and kill all the enemies before they kill you. This is where a Defender player begins to have some difficulty. In addition to the good old landers, bombers, pods, and swarmers, several hideous new enemies have been added—namely, Yllabian Space Guppies, Dynamos, Firebombers, Phreds, and Big Reds.

Dynamoes and the Space Hums they produce are the least threatening of these new opponents. They don't shoot at your ship, and willingly move into your line of fire. Space Guppies, on the other hand, are a new challenge. Their bizarre behavior and pin-shaped shots can be a problem when dealing with other enemies.

The most sadistic enemy to be faced in Stargate is the Firebomber. Not only do they throw flaming fireballs at you—many of which block your shots—but they even dodge your shots with great skill. The Firebombers on higher waves require a great deal of practice to shoot, and the great hordes of Phreds, Big Reds, Munchies, and Baiters that begin to pour in at the end of the wave make that last Firebomber a very hard target to hit.
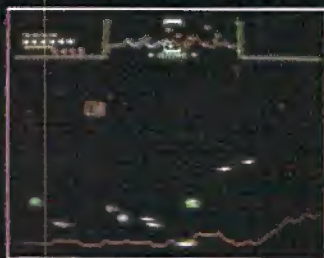
Battling Space Guppies near the Stargate.

Firebombers are your toughest opponent.
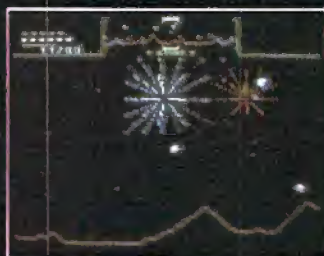
Explosions like this are worth dying for.

You have to lose all 10 men to see this.

STARGATE

THE MORE COMPLICATED GAME

The Stargate is the major addition to Defender Stargate. On the first ten waves, if you pick up four humanoids and fly forward into the Stargate you will be warped three waves ahead and given 2,000 points for each humanoid saved in the process. If a humanoid is being picked up, the Stargate—if used—will hyperspace you to that area so that you can save the humanoid. If no humanoid is in this predicament and the Stargate is used, the ship will be hyperspaced to the far side of the planet.

Another complication is the addition of the inviso button. Once you stop blowing off smart bombs trying to hit it, it can be used to get out of just about any situation. The inviso button is probably the most abused control in any game. It's best used while trying to save humanoids—saving Stargate humanoids nets a lot more points than saving Defender humanoids. In Stargate, each humanoid saved is worth 500 points, and this increases by 500 points with each humanoid saved up to a maximum of 2000 points.

Stargate is a very slick and flashy game. Color has been added to the terrain, there are messages below the scanner, and more attention to detail in general can be found. Going into space is a virtual Hollywood extravaganza not worth the price of admission. And the enemies are so detailed and colorful that they can wreak havoc on your depth perception. Much of the detail can go unnoticed, however, and lends nothing to the game play—a Stargate baiter with rotating eyes is no more dangerous than a Defender baiter without them.

Many of the problems in Defender have been corrected in Stargate. The machine does not slow down as often, enemies don't mysteriously disappear, and smart bombing pods will not result in a crazed cloud of swarmers. But—in spite of all this—there are still some die-hards that prefer the simplicity of Defender to the flashiness of Stargate.
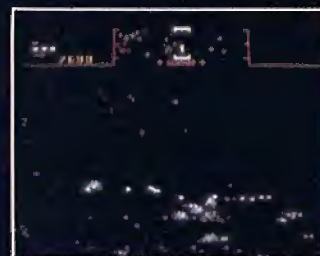
Use inviso to plow through the Mutants.

A typically busy day in Free Space.

RAIDERS OF THE LOST ARK

by Rob Leachman

In Atari's popular 2600-series home video cartridge, Raiders of the Lost Ark, you're Indiana Jones, a stubborn, rough-and-ready archeologist in search of the lost Ark of the Covenant. It is rumored that the Ark contains remnants of the Ten Commandments; possession of it is said to give the owner unlimited powers.

You must guide Indy through 13 different screens, each filled with an assortment of dangers. Poisonous snakes, thieving sheiks, and evil Nazis are but a few of the many obstacles you'll encounter throughout your journey. To locate the Ark, you must acquire certain objects along the way—knives, whips, revolvers, and so forth—to ensure a safe passage.

Raiders of the Lost Ark, of course, is based on the hit adventure movie by George Lucas and Steven Spielberg. The Atari 2600 cartridge is among the most difficult riddle-type adventure games ever developed. In order to successfully move from screen to screen and find the Ark, you must learn which objects can be used to your advantage and when to use them.

It's not an easy task. Supposedly, only a few people at Atari know the solution to the game. If you've been suffering through long hours of frustration, searching unsuccessfully for the Ark, suffer no more— we've found it! The road to the Ark is mapped on the pages that follow. But if you prefer to discover the answer for yourself, read no further —the secret of the Ark is about to be revealed.

The Marketplace.

The Entrance Room.

The Temple.

STEP 1

As you begin the game, you'll be in the Entrance Room. In the room with you will be a whip and a dreaded snake. Avoid the snake, pick up the whip, and run downscreen to the Marketplace.

Once safely in the Marketplace, you will need to acquire a magic flute (so the snakes can't get you), a grenade, a key, and the Eyepiece Jewel for the Map Room. The snake won't attack until you start peeking in the baskets, so there's no danger yet. Stand on the flute, but make sure you aren't touching the Black Sheik. Press the left action button to drop the bag of coins and buy a flute. Now you must play the flute by moving the selector dot under it. This makes you snake-proof, so you can pick up the other items you need without worrying about the nasty cobra. Go the grenade from the blue basket, and the key from the pink basket. Wait a few seconds, then go back and check these baskets again. You'll find the Eyepiece in one of them. You'll need it to see the hiding place of the Ark later on, so don't drop it!

STEP 2

Now you are ready to enter the Temple of the Ancients. Go back to the Entrance Room, and move to the upper right-hand corner of the screen. Watch out for the snake. Move the selector dot from the flute to the grenade with the left joystick. Now switch back to the right joystick and press the action button to drop the grenade. Quickly run back to the Marketplace before the grenade blows up (and you with it). When you return to the Entrance Room you'll see a big hole in the right wall that leads to the Temple of the Ancients. Enter it, but be sure to avoid the snake!

STEP 3

Move down to the lower right-hand corner of the Temple of the Ancient, and grab the timepiece on your way (you'll use it later in the Map Room). Go through the passage, into the Blue Room ("The Room of the Shining Light"). There you'll be trapped in one of the cells. Use your whip to break holes in the wall. Be careful. If you touch the walls yourself, the holes will be refilled. Hint: you can make your work much easier if you whip the lowest block out of the wall, then descend until only your head shows. You'll then be able to walk right out. This is the quickest and easiest way out of the cells.

STEP 4

Once you are out of the cell, run up and over to the right wall, at the same level as the big blue block. Caution: if you touch any of the blocks or the Guardian touches you, you will be put back in the cell! Just run over to the right wall and move up until you find the door. Then — presto! You will be in the Treasure Room.

One quick word about the Treasure Room. You can grab all the money you want, and leave easily. But if you take one of the other treasures, you will be thrown back into the cell when you exit. If you drop your whip you will be able to carry more money. However, do this only when you are about to exit—you don't want to run the risk of getting thrown back in the cell without a whip. (If you do get stuck, move back and forth along the bottom of the cell. A secret passage will eventually appear).

Okay, grab some treasure. You will need to have two bags of money and one of the special treasures, the Egyptian Ankh. This will give you the power to teleport to the Mesa Field, and will also make the grappling hook available (more on that later). It could take a while to get the Ankh, because it is a valuable item that the gods don't like to just give away. Just keep entering and exiting the room, grab a bag of money each time you enter, and the Ankh will eventually appear.

STEP 5

You should now have two bags of money, the timepiece, the Eyepiece, the key, and the Ankh. When you have all of them, go back into the Blue Room, hit a wall, and be forced into one of the cells.

Now for the fun part. Move the selector dot to the Ankh and press the button on the right joystick. Whamo—you'll be transported to the Mesa Field! You'll also have a little dot flying around you. That is the grappling hook. You must use it to move from mesa to mesa.

Moving the joystick up and down will move it closer and farther away from you. Press the right action button when the dot is on the mesa you want to swing to—you'll automatically be transported there. If you miss the mesa and fall, quickly press the right action button again to return to the first mesa. Use the hook to move down to the bottom of the Mesa Field on the middle mesa. Drop the Ankh, center yourself on the mesa, and walk into the room below. You will be walking on a narrow ledge, so be careful not to fall.

STEP 6

Place the selector dot on the key and move down the ledge until you see the map in the center of the screen. When you see it, move to the exact center of the narrow strip that leads into the map area. When you are exactly centered, move the selector dot off of the key (warning: do not do this before you are centered or you will fall). Move the selector dot to the timepiece, and press the right action button. You will see the clock showing how much time remains until the sun will shine in and reveal the location of the Ark. The sun shines when the hand of the clock points straight up. Wait until the sun is about to shine in, then move the selector dot to the Eyepiece. Look closely. When the sun shines in, the rays will point to a mesa on the map and a small dot will flash there. This is the mesa containing the Ark!

Do not read any further unless you want the complete solution.

The Treasure Room.

The Mesas.

The Map Room.

The Black Room.

The Black Market.

The Marketplace.

STEP 7

Okay, now to get the shovel. Move the selector dot onto the key and walk out of the map area, back to the ledge. Walk down the ledge and into the Black Room. In this room are little creatures that will steal your objects if you let them (they don't have an official name but they look like bugs dressed in trenchcoats). When you enter this room, you will be invisible. Try to avoid hitting any of the bugs as you move down to the lower right-hand corner of the screen to find the secret passage leading to the Black Market. Head for the corner and then move back and forth, pulling the joystick down until you find the passage. When you do, you will be in the Black Market, ready to buy a shovel.

STEP 8

If you were careful enough, you should have in your possession two bags of money. Stand on the shovel and drop both bags of money. When you drop the second bag, you should get the shovel. You can now drop any of the other items you may have, but be sure to hold onto the shovel.

STEP 9

Now proceed out of the Black Market and into the Marketplace. There is a passage to it along the right wall, about one third of the way down the screen. From there you will need to go back to the Temple Treasure Room and get another bag of money and the Ankh to complete your quest (you will use the money to buy a parachute, and the Ankh to

get back to the mesa containing the Ark). Get these treasures and then return to the Marketplace. Buy a parachute with the bag of money, and then use the Ankh to teleport yourself to the Mesa Field. Move to the correct mesa, and then let go of the Ankh.

STEP 10

Now for the hardest part of the game. You must jump off of the top of the mesa and parachute to the bottom of it. Move the selector dot to the parachute. When you think you are ready, step off of the mesa. You will drop quickly down the side of the mesa. Push the button on the right joystick to open the chute, then move the stick to the right or left to control your descent. You will want to make the middle of the chute hit the tree branch just right, so that you will be sucked into the mesa. It's really hard to do, and you might have to practice it three or four times to get it right. Hint: Try to hit the button as soon as possible, then move to the left just a little bit. When you are even with the branch, go left again and you should be sucked right in. Keep trying! You are almost to the ark.

STEP 11

Once you make it inside the mesa, press the left button to drop the chute. Run down to the bottom of the screen to the capstone. Watch out for the bugs. If you let them take your shovel you will be trapped there forever (or until you start the game over). Move down to the capstone, and place the selector dot on the shovel. Use the right joy-

stick and the button to dig away the capstone. It's hard work, but just keep pressing the button and going up and down on it. Eventually the stone will disappear.

Now for the moment you've been working toward. If you are in the correct mesa, when the stone disappears you will see your goal. You will be on top of the pedestal with the Ark shining above you. Congratulations, now you are a real Raider of the Lost (and now found) Ark!

This isn't the only path you can follow to find the Ark. There are more direct ways that are riskier. Keep experimenting. If you are good enough, eventually you might find the special signature that only the highest scorers know. Happy Adventuring!

The Parachute.

The Capstone.

Here it is—the Ark!

STAR TREK, THE VIDEO GAME

What do E.T., Tron, Raiders of the Lost Ark, and Star Wars have in common, besides millions of dollars in box-office receipts? Video games of the same names, of course. Game manufacturers have begun cashing in on the popularity of hit movies in home games like Raiders or E.T. and arcade games like Tron and — now — Star Trek.

Star Trek is not only the newest video game based on a popular movie, it may be the best. But, as any experienced player will tell you, that isn't really much of a compliment. Most of the movies-turned-games that have come out in the last two years have been quick and sloppy attempts to cash in on a movie's popularity. Tron was four mediocre games in one flashy package, and E.T. (the home game) was the crude and awkward result of a mere five weeks work. Star Trek, on the other hand, is a good game that just happens to have the added appeal of a proven name.

Star Trek's split screen with status report (top left), LRSS (top right), and bridge screen (bottom).

A Klingon warship about to enter firing range.

Docking with a Federation Starbase replenishes photons, shields, and warp time.

Three dimensional perspective, four-color vector graphics (as used in Gravitar and Space Duel), and a split screen are some of the highlights of this exciting new game of skill and strategy. You are the captain of the Starship Enterprise, securing an endless number of sectors in search of the evil Nomad, all the while collecting STU's (Strategic Training Units) as points. You fight against realistic Klingon ships, and can dock at starbases for extra energy.

The Enterprise controls are intimidating at first. A rotary control allows you to move and fire in any direction, via the thrust and fire buttons. Other capabilities include the launching of photon torpedoes and warping to another sector. And a status report and LRSS (Long Range Sector Scan) are used to keep you informed of what's happening around you.

The game has two screens: a bridge view and a long range scanner. The bridge view shows you what is happening immediately in front of the Enterprise, much like the screen in front of Captain Kirk in the movie. The long range scanner is more like the small screen used by Mr. Spock to check for distant threats in any direction. It's best to keep your eyes on the long range scanner—otherwise, you can be attacked from your blind side without warning.

As you fly through the universe, you will use up valuable energy that can only be replenished by docking at a starbase.

A hefty bonus (in both STU's and spare energy) is earned whenever you secure a sector without docking, so only dock when you absolutely must.

Klingon warships, which are your principal enemy, come in three different colors: red, purple, and white. Red Klingons attack and destroy starbases, while purple Klingons attack the Enterprise itself. After a purple Klingon warship has survived for a long time, it will turn white, gain speed, and ram the Enterprise, costing one shield unit per hit.

Saucers are another enemy you must contend with. They move faster than the Enterprise at the same angle. If a saucer catches the Enterprise, it will drain warp energy. But if you successfully destroy a saucer, you will be awarded 5000 STU's plus a warp bonus.

The nomad will appear first in sector 2.1 as a single yellow pixel on the LRSS. It takes long strides in random directions, leaving mines wherever it stops. Nomads are worth 30,000 STU's, but mines are worth nothing. On the first Nomad screen, there is a simple trick for killing the Nomad every time. Just rotate the direction control all of the way clockwise, and begin firing before the Nomad comes on the screen. Your shots will hit it as soon as it appears.

The game (or Strategic Training Simulation) lasts until all of your shields are gone and the Enterprise has been hit three times. The first hit after

the shields are gone will destroy your proton torpedoes. A second hit destroys your warp drive, and a third will destroy the Enterprise.

As you can see, Star Trek is a complicated game. And, as in other complicated games, there are as many ways to play successfully as there are successful players. The exact approach you take will depend on your own abilities and priorities. The following advice was offered to us by a 200,000 point player: "When you begin the simulation you should make the red ships priority in order to protect your starbases.

Then you can take out the purple warships in large groups with photon torpedoes. Make sure to get the saucer before you secure the sector. Saucers can be lured into firing range by moving away and spinning around when they get close. Always use your LRSS except during a Nomad sector, when you should use the LRSS to maneuver the Nomad into view on the bridge screen. Then follow it on the bridge screen, firing rapidly."

Drawing fire from Klingon warships.

A bridge-screen view of a saucer.

The Nomad leaves deadly blue mines wherever it stops.

NEO
XEVIOUS: HOW TO PLAY HOW TO WIN
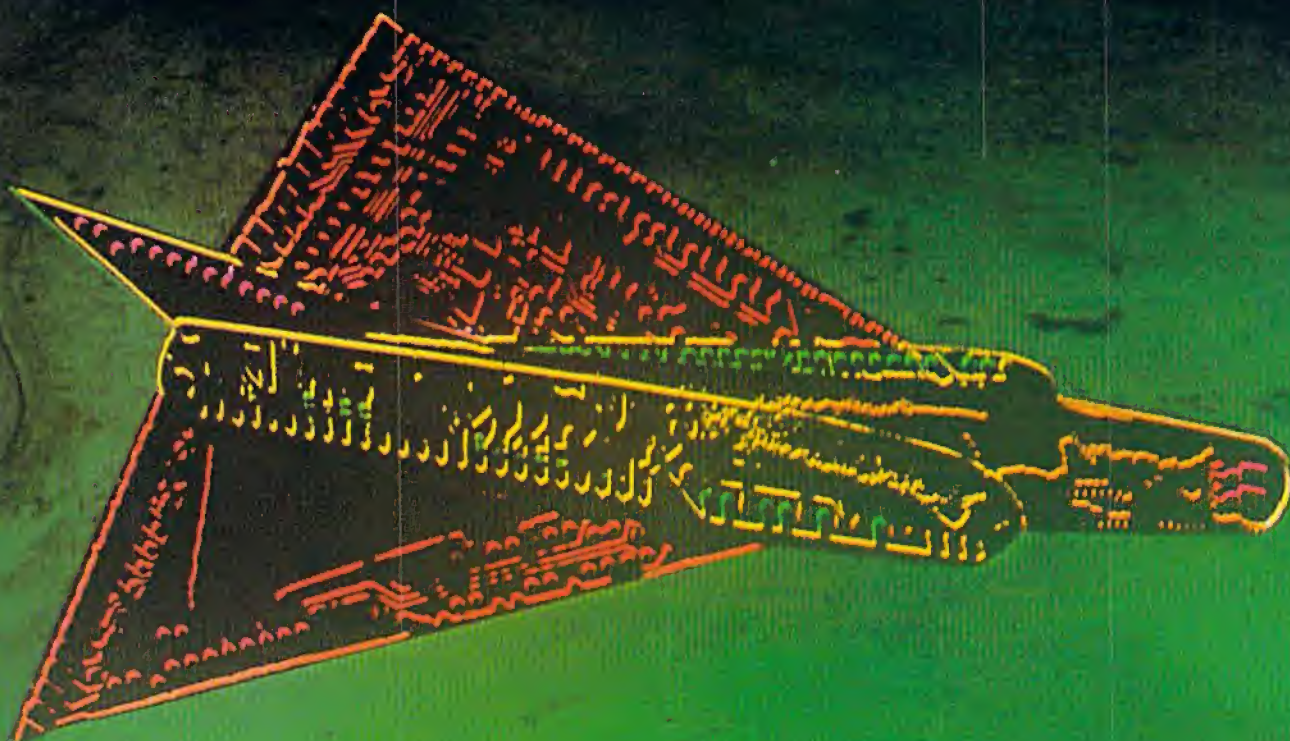
Xevious is one of those rare games that is able to combine excellent graphics and sound with fun and challenging game play. The graphics are as good as Zaxxon's or Tron's, but the game play is much better. The basic concept is simple, as in all shoot-em-up games—try to stay alive as long as possible, while racking up points by blasting anything that gets in your way. But Xevious adds a few new twists that make it far more interesting than a simple shoot-em-up.

Don't waste shots before enemies enter the screen.
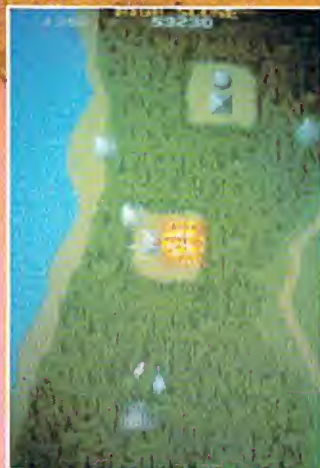
Use your mobility to get ground targets.
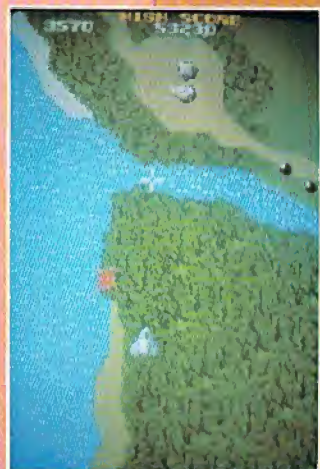
Beware the harmless-looking black balls.

The basic premise of the game is that you fly a Solvalou spacecraft over various landscapes while 32 different enemies try to destroy you with attacks from the ground and air. The Solvalou can fly anywhere on the bottom half of the screen—use this maneuverability to your advantage when dodging enemy shots.

Your spacecraft is equipped with two different weapons for fending off the attackers: a fire button, which shoots missiles straight ahead to hit air targets, and a bomb button, which drops powerful bombs on the ground targets. A bombsight that moves across the screen in front of your ship shows where each bomb will land. If the crosshairs are over a ground target, the radar will glow bright red.

Several types of enemies will attack from the air. Each of these metallic-looking crafts has its own method of attack. The first to appear are the rings, your weakest enemy. Often, they won't
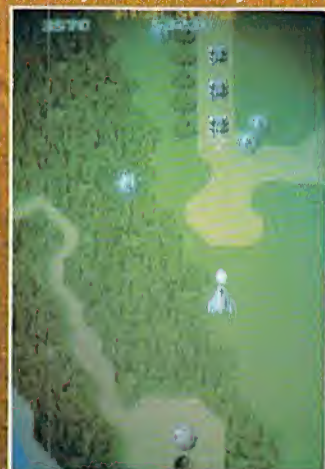
Careful placement of bombs is important here.

even shoot at you, making them easy targets for your missiles. As you progress, the Xevious forces become more advanced and more dangerous. The evasive sting-ray shaped ships are the most difficult to hit, and they fire several shots at a time.

Xevious enemies have one important advantage over you: they can fire at any angle, while you can only fire straight ahead. Also, when the ships get past you (below you), they don't always immediately go off the bottom of the screen. They may hang around and fire at you from behind for a while. Your best bet is to shoot as many of them as possible before they get by.

There is one type of flying obstacle that can't be destroyed by any weapon: the flying shields, rotating mirror-like walls that float through the air by the dozens. They create a mobile obstacle course for your ship and deflect your shots away. Flying ships can be very dangerous around the shields, because they will be protected from your shots.
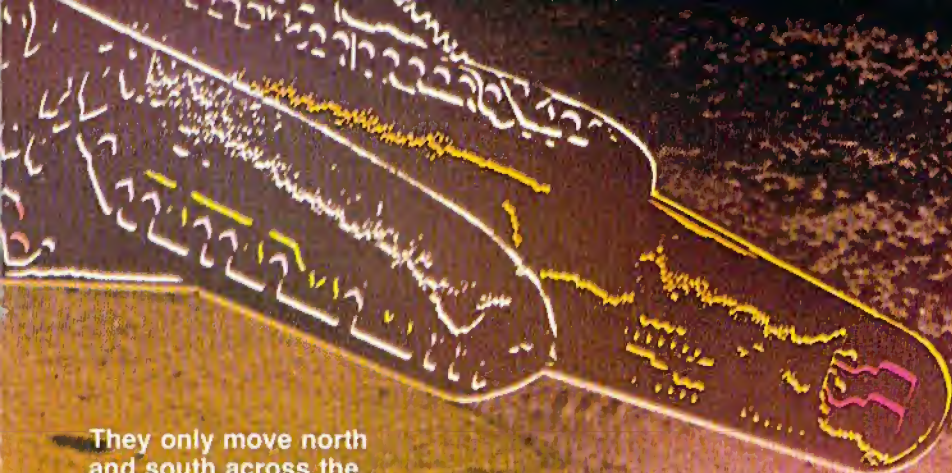
The ground targets are pyramids or circular domes that attack by shooting up at you. They will always appear in the same places, so anticipating where they will appear is very helpful. Finding and destroying ground targets is an im-

portant part of the game, because ground targets are worth much more than air targets.

Early in the game, ground targets are sparsely placed, making it possible to destroy all of them. Just fly high on the screen, and bomb them as soon as they appear. Later in the game, it isn't possible to hit every ground target, so you must choose your targets quickly and carefully. In general, you should destroy the most dangerous bases first and then bomb any other that you have time for. The large domes with glowing red lights in the center are the most dangerous ground target, and pyramids—which never shoot at you—are the least dangerous. A well placed bomb can destroy a large group of ground targets, so watch for this opportunity to get some relief from enemy fire.

There are two types of moving ground targets: mobile ground bases and tanks. Mobile ground bases always appear in the same places and always move in patterns. They can and will shoot at you, so it is important to destroy them as soon as possible. Just place your bombing target slightly ahead of them in the pattern and drop a bomb.

Tanks behave a little more intelligently than mobile ground bases.

They only move north and south across the screen, but they sense your bomb dropping and react to it. They don't shoot at you, so they're really nothing more than a distraction and cheap points. If you must destroy them, use two bombs. They can only react to one bomb at a time, and will move right into the second one.

The last type of ground target is underground domes. They are completely hidden from your view, and can only be destroyed by two bombs. The first bomb brings the dome up to the surface, and the second bomb destroys it. Underground domes don't fire at you, but destroying them is very worthwhile—you get 2000 points for bringing one up, and 2000 more for destroying it.

And how do you hit an underground dome if you can't even see it? Just watch the bombing crosshairs—if they glow red when there isn't a visible target under them, there must be an invisible target under them. Search for underground domes whenever you get a break in the action. They can appear by themselves or in groups of up to eight. When you find one, remember where it is, because it will still be there the next time you come around.

The most awesome of the Xevious forces is the immense Mother Ship. A low hum warns you of its approach. The Mother Ship flies at a lower altitude than your Solvalou, so firing at it is useless. Only a direct bomb hit on one of its glowing hatches will do any damage. Dropping a bomb on any of the four outer hatches will decrease the Mother Ship's firepower, and a bomb dropped through the large center hatch will disable the entire ship. For maximum points, bomb the four outer hatches first. If you ignore the Mother Ship completely, it will eventually leave and let something else finish you off.

Black balls are the last—and perhaps the most annoying—Xevious adversary. There are three different types of black balls, and all of them appear on the screen and then explode into bullets if you don't destroy them quickly enough. The first type is the smallest and most annoying. They appear out of nowhere and then disappear quickly, leaving bullets all across the screen. The larger black balls appear later in the game. One type will stop near the bottom of the screen and explode into a semicircle of shots, which are hard to avoid

because they appear so quickly. The other type of black ball is the largest and most devastating of all. It stops higher up on the screen and then explodes, spraying shots in a complete circle. The only effective way to deal with any of the black balls is to shoot them before they explode.

In addition to all of these various types of opponents, you have one other concern in Xevious —the weather. Periodically, you will encounter a snowstorm, where small crystals fly diagonally through the air. These crystals can destroy your ship, so stay near the bottom of the screen and shoot any crystals that come toward you. The storm never lasts long, so just try to survive it, rather than chasing down the crystals.

Knowing the position of ground bases is very useful.
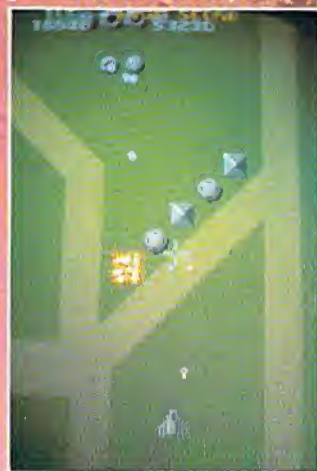
A direct hit on a ground target.

The flying shields are slow, numerous, and indestructible.

Don't forget about ground targets while avoiding the shields.

THE WINNING EDGE

by Eric Ginner

The man lounging around the custom-made
Pac-Man pool is Brian McGhee, a former Atari
game designer who now designs cartridges for
Starpath (the "Commie Mutants" company).
When Brian isn't dreaming up new games
or sunning his feet, he can usually be found
running up the high score on a Ms. Pac-Man
machine.

Brian's approach to Ms. Pac-Man is radically
different from the "pattern" approach used—
unsuccessfully—by most players. Instead of
avoiding the monsters, he makes them avoid
him. This is accomplished by using the hiding
spots and loops described in specific detail
over the following pages.

If you're just starting out on Ms. Pac-Man, this
article isn't for you—you need to know the ba-
sics first. Read the Sequels article on Ms.
Pac-Man (page 16 of this issue), and then prac-
tice until you're scoring 40,000 or more. Once
you reach that point, you're ready for these
Winning Edge Strategies. They'll turn your
good game into a great one.
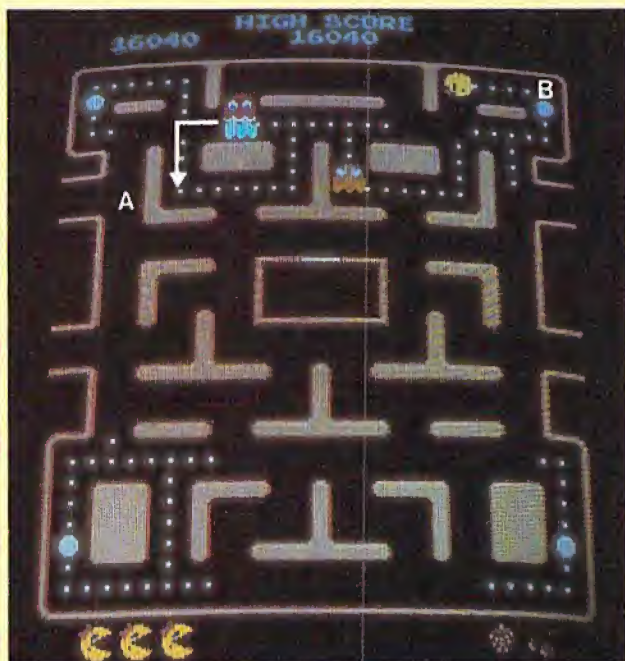
FIRST MAZE

Your goal on the first two boards should be a perfect score of 29,400 points. Stay near the tunnels and avoid the ghosts until they have reversed twice—after 7 seconds and again after 25 seconds—and then you're ready to go for points. The ghosts will not reverse again on these boards unless you die.

To get 1600's on the top two energizers, go back and forth in the top tunnel until Red, Pink, and Blue are close together in the long top row. Gold won't chase you, but make sure she is reasonably close to the others. Then wait at point A for the ghosts to turn down as shown. Go through the tunnel and wait at point B for your 1600.

Getting 1600's on the bottom energizers is even easier—just let all four ghosts follow you on the bottom row, grab the energizer, and reverse to eat them. Then use the temporary hiding spots to clear the remaining dots. Whenever the three smart ghosts (Red, Pink, and Blue) turn away from you, go to a safe part of the board and clear it off.

SECOND MAZE

This maze is used on the orange, pretzel, and apple boards. Although a score of 77,600 points is possible after the apple board, the 1600's are more difficult on this maze; 62,000 is a good score for the end of the apple board.

The bottom two 1600's are similar to the first maze. Use the bottom tunnel to get Red, Pink, and Blue together after the two reverses. Then let them follow you to one of the bottom energizers, just like in the first maze.

Point A is the key spot for using the top energizers. With Red, Pink, and Blue close together, parking at point A will send them into a loop as shown. If Blue turns right out of the loop, move to the right and then back to A; she will continue to the right and miss you.

Once all three monsters are in the top loop with Gold nearby, go down and grab the energizer. The monsters will reverse when they turn blue, coming right back towards you. Eat them all for a 1600, and then use point A to clear any remaining dots on the right side of the board. Point B can be used in a like manner to clear the left side and get a 1600 there.
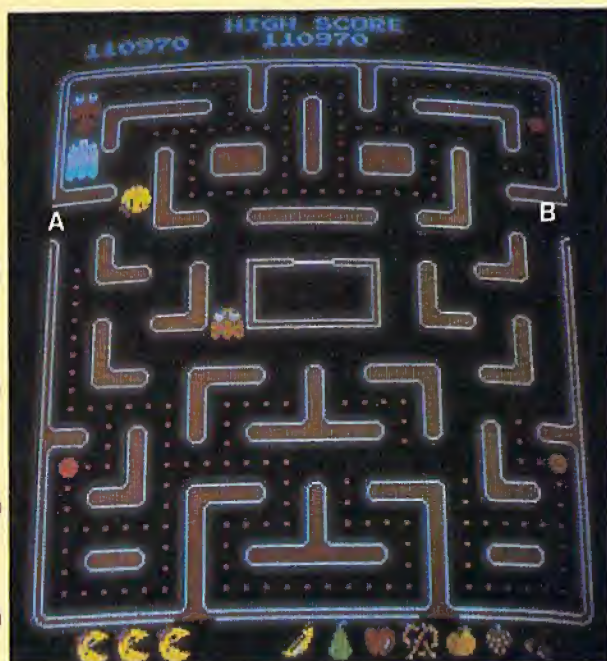
THIRD MAZE

The third maze is the easiest of the four mazes. From point A it is possible to set up the ghosts for 1600's on every corner. Then you can clear the rest of the dots with short patterns for each part of the board.

When you start the maze, don't go into the bottom loop right away. Go up to the tunnel and wait for both reverses. Go between point A and point B until Red, Pink, and Blue are locked up at Point A. By moving back and forth between A and B, you can get the ghosts closer together. Point A is a permanent hiding spot. When you stop there with Red, Pink, and Blue anywhere in the top part of the maze, they will circle above you forever. Meanwhile, Gold will circle below you in one of two patterns. Make sure Gold is circling next to the middle box.
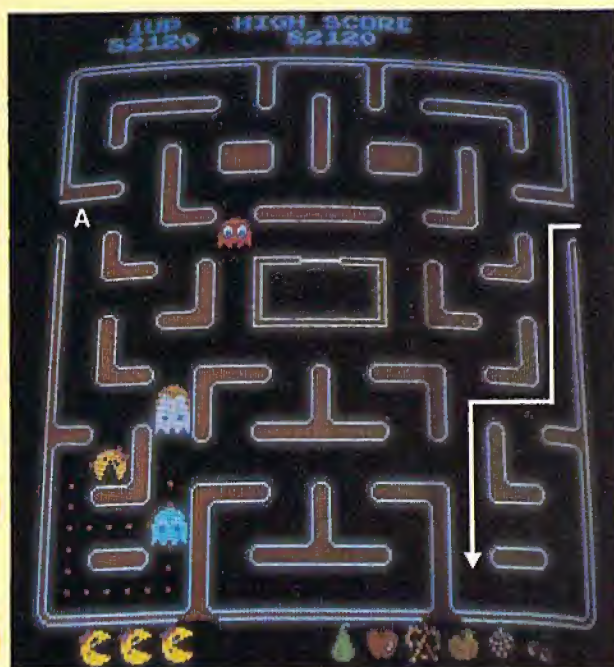
It is best to go for all four energizers before clearing the dots, because Red will speed up after you have eaten most of the dots and that makes it harder to set up the 1600's. At point A, wait until the three ghosts turn to go under the energizer, then go out the tunnel and wait under the top right energizer. The three ghosts will come right behind you and Gold will be near point B. Eat all four and go back to point A to set them up again. Set them up the same way for the bottom right energizer.

As soon as Red, Pink, and Blue turn above point A, go out the tunnel, down the right wall, and around the bottom right loop. Red, Pink, and Blue will come right behind you and Gold will be just above them.

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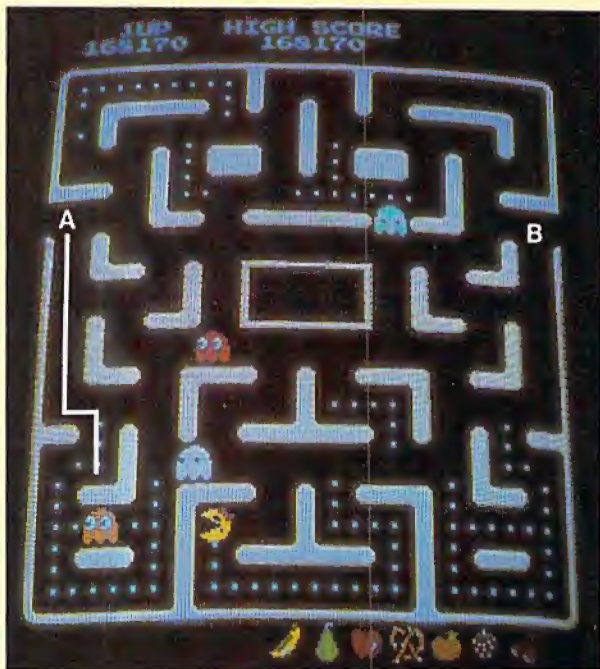
Use point B as a hiding spot to get the top left energizer. The ghosts will not turn right above point B automatically—you have to move right to force them to turn right. As soon as they turn, go out the tunnel and under the top left energizer to wait for them. Gold will be at point A and come right up to you for the 1600.

For the bottom left energizer, use point A again. This time get the red ghost slightly ahead of the other two. When Red turns above you by himself, go straight down and wait next to the energizer. Pink, Blue, and Gold will pass by and circle below you. They will not come up under you. Red will come right behind you. Eat him first, then go down to eat the other three.

Point C will help you clear the rest of the dots. Set up the ghosts at point A so Red is ahead of the other two ghosts. Go straight down and over to point C. Pink, Blue, and Gold will again go past you and circle on the bottom left. Now you can clear any dots to the right of you by leading or going around only the red ghost. Clear off as much as you can, then set them up again. It may take four or five passes to get all of the dots.

Patience is the key to the third maze. Always set up the ghosts so you are in control of them. Always wait at the tunnel for the fruit to come to you—it will exit opposite the tunnel it entered from. Don't make the rookie mistake of chasing down a banana only to get killed doing it.
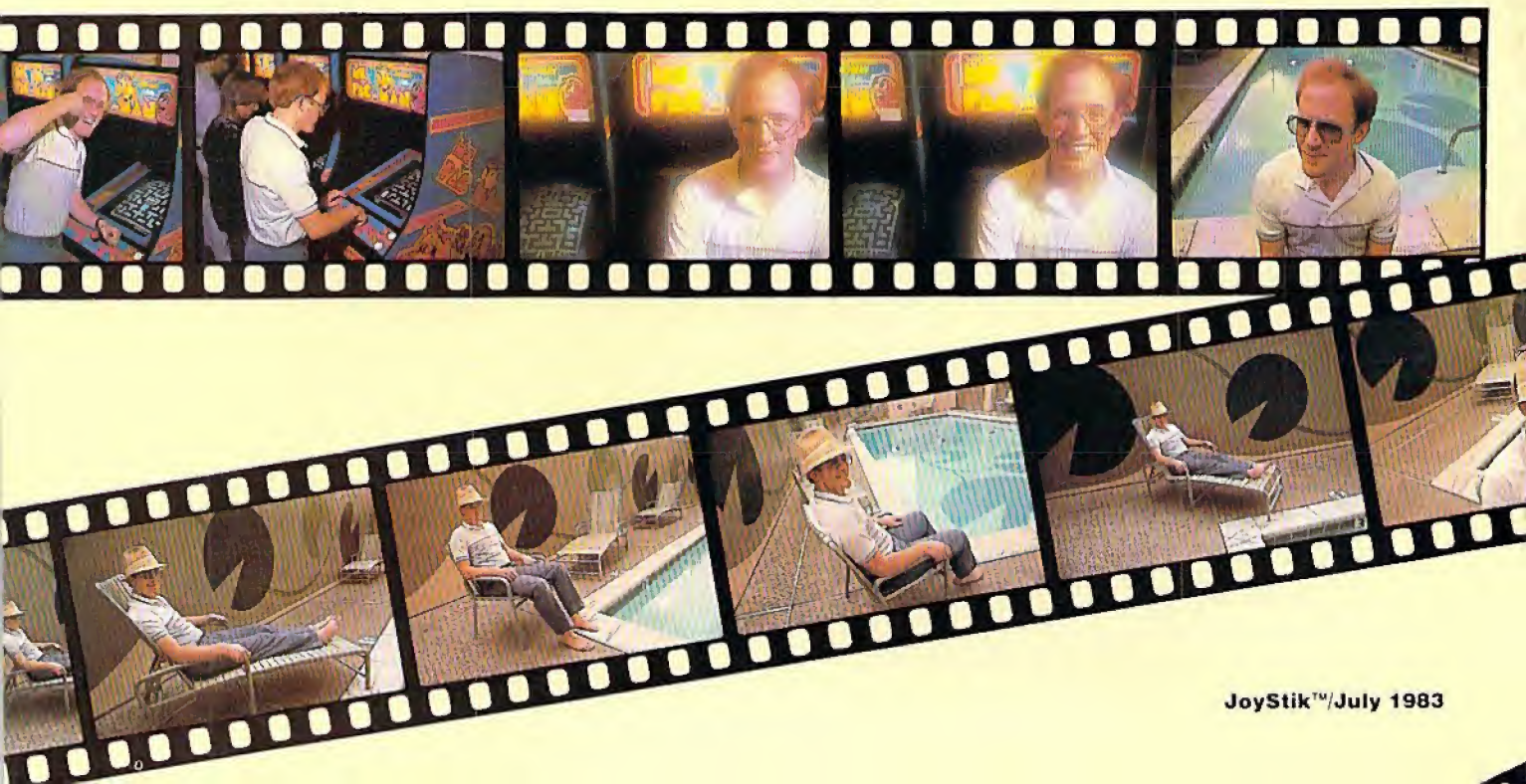
FOURTH MAZE

In the fourth maze, it is important to keep moving. The middle of the maze is the safest—there are lots of turns and the four tunnels give you access to all four corners of the maze. Try to group the Red, Pink, and Blue ghosts together by making a loop around the tunnels. Keep them close behind by pausing at each tunnel entrance. Then lead them around until you have a clear path to one of the corners with all three behind you. Here's a useful tip: Watch what Gold does when you are leaving each tunnel, and then remember to avoid that path when you're in that area of the maze.

The energizers are harder to use for big points because of the long paths around them. Try to at least keep Red, Pink, and Blue close together for the 800's. Use the ghosts' recovery time to clear the remaining dots around the energizer. Remember to stay around the middle of the maze, especially at the end of the board when Red speeds up.

The bottom right part of the maze is good for losing the ghosts behind you. Facing down will cause the three smart ghosts to go straight down past you on the left. Then you can go up to the top or follow them around the bottom. Point A is a good hiding spot, but not permanent. Just as in the second maze, Blue will not always make the turn down, which forces you to move.

The top dots can be cleared by making large circles around the maze. Lead the ghosts around the outside of the maze by pausing near the corners and facing to the side of the maze. If they get separated, make the loop through the tunnels to get them back together. Don't let them take short-cuts through the middle to cut you off.

LATER MAZES

After the fourth maze, the third and fourth mazes alternate in groups of four. On board #17 the ghosts do not turn blue. Board #18 is the last time the ghosts turn blue. On board #21 and beyond, just as in Pac-Man, you move much more slowly than the ghosts. A few things to remember—you slow down when you eat dots, so clear the long straight paths early before Red speeds up. On the third maze, use the tunnel as an escape. On the fourth maze, stay near the center. You can turn faster than the ghosts can, and there are more places to turn near the middle. Use the energizers to make the ghosts reverse, and follow them out of the corners.

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HOW TO WIN $25,000 IN 24 HOURS by Matthew White

A smart, attentive, free-wheeling video gamester can turn the video-game contest into a substantial source of income. In fact, video game contests are supporting many a family at this very moment. Prizes span the distance, from t-shirts to world tours. And there's no reason that you can't cash in, too, if you follow a few general rules.

RULE NUMBER ONE:
Choose an Arcade Game!

those are the games that make news, and news are what these contests are all about. Choose, therefore, one of these games: Pac-Man, Defender, Centipede, Dig Dug, Donkey Kong, or Joust. These are, consistently, the most popular contest games. If you can't stomach the thought of these games, you can add Robotron, Ms. Pac-Man, Zaxxon, Tempest, and Frogger to the list. Although not as popular, these games are occasionally the subject of a contest. If you choose a game other than those described above, you're on your own.

RULE NUMBER TWO:
Keep Up-To-Date on Home Games.
Unlike arcade games,

tridge, one that they're trying to promote. There were, at one time, lots of contests on Demon Attack and Pitfall. No longer. As soon as a game becomes popular, there's a new game to promote. It is better, therefore, to be eclectic in your tastes — try what's new. If you're up on the latest offerings from Imagic and Activision, chances are a contest will come your way.

RULE NUMBER THREE:
Read the Papers!
Most video-game contests are announced at some time in your local paper. Look for all kinds of sponsors — video stores, police, campgrounds, arcades, restaurants, schools. The strangest places promote their causes through video games. Knowing how to find a contest may be a better road to success than knowing how to play a game.

If you want to compete in arcade contests, it's best to pick a game — preferably a popular one — and get super good at it. Most arcade contests are designed to promote an arcade or a cause. The contest will generally be held on one of the more popular games, because

home contests — those sponsored, for example, by Mattel or Odyssey or Activision — are usually built around a new car-

RULE NUMBER FOUR:
Join the Clubs.
Join them all. Most clubs sponsor periodic contests. And this information can be delivered to your home. The clubs and their addresses are:

The Atari Club
1700 Walnut Street
Philadelphia, PA 19103

The Odyssey Club
Ceco Publishing Co.
30400 Van Dyke Blvd.
Warren, MI 48093

The Activision Club
2350 Bayshore Frontage Road
Mountain View, CA 94043

The Intellivision Club
P.O. Box 4010
Burlingame, CA 94010

Patterns aren't going to do you any good if you don't have time to perform them.

A few testimonials are given here, to help psych you up for the great video-game contest hunt. Remember, these are just people like you trying to make some money in this tough and crazy world. If you think their scores are low, get mad—that's what it's all about.

Andrew Levine, 15 years old, Needham, Massachusetts: $10,000 for 1,968,000 on Imagic's *Atlantis.*

Manuel Rodriquez, 18 years old, Stockton, California: $25,000 for over 32,000,000 on Mattel's *Astrosmash.*

Tony Scardigno, 10 years old, Weehawken, N.J.: Pound of gold ($6,000) for 938 points on Odyssey's *Pick Axe Pete.*

Richard Ross, 28 years old, Jacksonville, Florida: $6,500 for 3,958,901 on *Tron.*

This list, of course, could be extended through the rest of this magazine. It should make the point, however. There's money to be made in those games!

Another type of contest deserving of mention is Atari's mucho bonus award for game design. Over $14,000 was awarded in 1983 to eight individuals under the APX (Atari Program Exchange) award system. **Mark Reid**—a chemical engineer from Charleston, West Virginia—took the first prize for a game called **Getaway.** His

The other contest trend that you should know about centers around master of ceremonies Walter Day. The big thing going with Walt Day is his International Scoreboard. It is, to date, the most accurate arcade scoreboard in the country. The scores on his scoreboard are mighty high (this is the big league) and tough to match. Most of the names on the scoreboard are big contest winners, with thousands of video dollars under their belt. If you feel in that league, write directly to Walter Day at:

Twin Galaxies
 Entertainment Center
226 East Main Street
Ottumwa, Iowa 52501

That about sizes up the contest situation at present. Remember, keep your eyes open. There's good money to be made even in the smallest of regional contests. As long as you pay close, close attention to your local situation, memorize the five rules, and write all kinds of letters, a share of that purse could very well be yours. Good luck!

RULE NUMBER FIVE:
Score Points Fast.
Many of the contests are limited to a specific amount of time—anywhere from three minutes to three hours. Learn, therefore, the shortcuts.

Eric Ginner, 24 years old, Sunnyvale, California: $12,000 for 55,023 on *Centipede* (in 3 minutes).

game will go on the market and Mr. Reid will be paid royalties on sales. If this type of contest interests you, contact:

Atari Program Exchange
P.O. Box 427
155 Moffett Park Drive
Sunnyvale, CA 94086

BANDITS

by Owen Linzmayer
and Chris Vogeli

You might think that being the sole guardian of a desolate lunar supply base is a boring job. No way! In Bandits, a 48K diskette game program for the Apple II personal computer, your base is assaulted by thieving aliens from an unknown planet who are out to steal your supplies. Six different forms of alien creatures, each with its own fiendish form of attack, make it tough for you to stay alive, let alone defend your provisions. Bandits is one of the most exciting Apple programs available. It is one of the few games that actually gives an Apple computer the feel of a real arcade machine.

In Bandits, you control a bottom-screen base ship equipped with rapid-fire lasers and protective shields. One at a time, each of six groups of heavily-armed aliens will sweep down to attack and plunder your lunar outpost. You must avoid the creatures' fire and destroy them for points before they fly off into the stratosphere with your supplies. If you nail an alien while he is in the process of thievery, you will earn bonus points. When you've cleared the skies of one alien attack wave, another, more deadly, group of creatures will descend on your lunar base.

ELEMENTS

Base ship: You control a base ship with unlimited firepower that can move horizontally across the bottom of the playfield. The base ship can be controlled using either a joystick, a paddle, or the Apple keyboard. You fire your lasers up at the alien bandits who attack from the top of the screen. To protect you from the bandits' deadly arsenal of weapons, your ship is equipped with protective shields. To engage your shields, you must press the "S" key on the Apple keyboard.

When engaged, your shields will render you impervious to anything the aliens can throw at you. However, unlike your lasers, you have only a limited amount of shield power at your disposal. Your shield energy reserves are indicated by the gauge located at the bottom of the screen. By pressing the shields key once, your ship will be protected for a single unit of time and one unit will be deducted from your shield energy supply. By pressing the shields key several times in succession, you will be pro-

tected for a longer period of time; consequently, your shield energy supply will drop by several units. If you completely run out of energy, your shields will remain inoperative until replenished. Your shield energy supplies will slowly be recharged during the game if not otherwise depleted. Shield energy is fully replenished with each new base ship life.

You begin each Bandits game with five base ship lives. You lose a life each time an unprotected ship is hit by one of the bandits' weapons. Bonus base ships are earned at 5,000-point intervals.

Supplies: During most levels of play, there will be an assorted number of supply items located on the right side of the screen. In earlier waves these include foodstuffs — grapes, oranges, blueberries, and so on. In later waves, you must defend hard goods such as wrenches, keys, and televisions. You must protect these provisions from the light-fingered clutches of the evil alien bandits.

While they attack your lunar fortress, some of the aliens will pilfer your supplies and carry them off the screen. If you destroy a bandit while he is in the process of scurrying off with the goods, you will earn additional points. For each supply item left onscreen after eliminating a bandit attack wave, you will receive bonus points. In wave 1, this bonus is 100 points per item; wave 2, 200 points; wave 3, 300 points; wave 4, 400 points; wave 5 and beyond, 500 points.

Bandits: Six different types of alien bandits will appear in 28 levels of play. Some attempt to steal your supplies; others just attack you and otherwise do their best to ruin your day. Let's examine their individual characteristics one at a time:

Phalanx I creatures are the easiest of the aliens to defend against. These moth-shaped bandits are slow, fat, and are not as aggressive as their interstellar comrades. They will, however, attempt to steal your supplies as they attack. Phalanx I creatures like to travel alone or in groups of no more than three. They are worth 35 points each when destroyed; if they are carrying loot, they are worth 75 points when destroyed.

Phalanx II creatures are more difficult to deal with than are their phalanx I brothers. They are a bit smaller and sleeker, and are certainly more aggressive, especially at stealing your provisions. Phalanx II creatures like to travel in large group formations; at times, you may encounter a solitary Phalanx II attacker, but this is rare. Phalanx II bandits are worth 35 points each when destroyed; 75 points if they are carrying off your supplies.

Menaces are your toughest opponents. They are small, fast, hat-shaped creatures who move erratically around the screen. While they won't attempt to make off with your provisions, this is a small consolation. They are armed with rapid-fire laser torpedoes which will rain down upon you in sheets. You will need to make full use of your shields and rely on your best evasive maneuvers to combat these deadly bandits. Menaces are worth 100 points when destroyed.
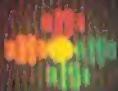
Carriers resemble large atoms that float around the screen. While they neither steal your supplies nor act aggressively toward you, they do release the dreaded alien nuisants, who are a great threat to your lunar base (more on them later). Carriers appear one at a time in the sky. When the first carrier appears, it will release a nuisant and then remain dormant. When all five carriers in an attack wave are on the screen, they will begin to release nuisants at random. When a carrier is destroyed, it explodes and releases four nuisants at once. You'll earn 200 points for each carrier you destroy.

Nuisants are just that—nuisants. While they cannot steal your supplies, they can play havoc with your defenses. Rather than fire upon you, they dive and attack your base ship "kamikaze-style." If one hits your base ship unprotected, you're done for. What's more, if a nuisant misses your ship, it will bounce up in the air and attack you again. Nuisants will disappear after four bounces. They are worth 50 points when destroyed.

Torrents drop killer alien napalm bombs on you as they attempt to steal your supplies. These derby-hat-shaped aliens head toward your base in a fast, twisting, wave-like formation. When they are either turning or are directly overhead, they will release one napalm bomb each. It is not difficult to avoid a napalm bomb, but beware of its aftermath. A napalm bomb produces a brief but large explosion. When the napalm hits, the area surrounding it turns red from the blast. While napalm effects last for only about a second, they still manage to put a damper on your horizontal movements at the bottom of the screen. Destroy torrents as soon as they appear. Torrents are worth 75 points each when destroyed; 100 points if they are carrying cargo.

STRATEGIES
Waves 1 through 3:
Wave 1 is a relative snap since it consists of only fat, slow phalanx I creatures. Waves 2 and 3 are a bit harder—they consist of phalanx II aliens and deadly menaces.

Lean on that fire button—start pushing it as soon as the action starts and don't quit until either you or the aliens are pulverized to space dust. Be sure not to let the phalanx creatures steal your fruit (as illustrated in "A")—you'll lose bonus points. Try not to deplete your shields needlessly; you'll need them later. The quickest way to clear the screen in the first three waves is to remain close to (but not in) the left-hand corner of the screen and continually blast away. If some of the aliens evade your first shots, they will circle overhead for one or two passes while firing down at you. A slow sweep from left to right with continuous firing action is usually enough to finish them off. If any are still left alive, position yourself in the left-hand corner and wait until they try to escape across the top of the screen. Then you can finally blow the last of them to atoms without much trouble.

Note: be wary of the aliens! There is nothing they like better than to draw you into a lonely corner and destroy you. Remember, you can position yourself near, but not *in* a corner (except to take care of the stragglers, as mentioned above). If you find yourself backed into a corner, be prepared to move quickly and get your shields up fast.

Wave 4: This level will test your nerves—it consists of carriers and nuisants.

We recommend playing it cool during this attack wave. Let all of the carriers appear on the screen. Sure, they will drop a few nuisants on you, but these can always be avoided or shot. Remember, nuisants disappear after only four bounces—if you can't get them with the first shot, move quickly and let them bounce until they die. When all five carriers have appeared, quickly blast them out of the skies. If you cannot kill all of the carriers at once, concentrate on the nuisants. Nuisants in large groups are almost impossible to dodge or destroy. The best strategy is to wait until they are just about to hit your base ship and then engage your shields (as depicted in "B"). The nuisants will explode upon contact with your force field and you will be safe. You will then be able to go back and give the same treatment to any remaining carriers and nuisants. Note, however, that shields are depleted quickly when they are under fire, so don't count on them to last forever when you are practicing the above maneuver.

Waves 6 and 7: Things really get tough here. You must contend with a fearsome fivesome—torrents, phalanx II fighters, carriers, nuisants, and menaces.

You'll need to get the torrents out of your hair as quickly as possible. Sit near the left-hand corner and wait. When the lead torrent appears, let go with bursts of continuous fire. Combine your shots with rapid side-to-side movement (as illustrated in "C") and the torrents will soon be gone. Eliminate the other bandits as detailed previously. Use your shields as necessary.

Waves 8 and beyond: From here on, the aliens attack in random order and at increasingly faster speeds. Shoot everything as quickly as possible. Move fast and use your shields as often as you need to in order to stay alive. The creatures in these attack waves can be beaten with the same strategies used to defeat your earlier opponents. All that you know about Bandits comes into play here.

A A formation of Phalanx II creatures attacking.

B Use the shields to ward off the Nuisants.

C A group of Torrents dropping napalm.

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TAKING THE LEAD AT POLE POSITION

by Eric Ginner

Pole Position is the best driving game yet. Its graphics, sound, and driving realism outclass even Turbo. The Fuji Speedway is the setting for an eight-car race with you behind the wheel of a Formula 1 racer. Your goal, as in all driving games, is simple —race around the track as fast as you can. You compete with seven other drivers, but time is your real opponent because the other drivers race like rookies.

The game is divided into two parts: the qualifying lap, and the race itself. The qualifying lap is the most important part of the game, because your qualifying time will determine your starting position for the race. The time needed to qualify is determined by the game's settings (73 seconds is standard). If you don't qualify, you can't compete in the race.

You start the qualifying lap by yourself, but will encounter other cars on the track later. Drive the course just as you would in the actual race, as described below. If you beat the time needed to qualify, a synthesized voice will commend you on your driving skill. Then, depending on your actual qualifying time, you will be assigned a position from first (pole position) through eighth for the start of the race. Earning the pole position (58.5 seconds on a standard machine) is very helpful: it assures you of starting the race in first place, and earns you a 4000 point bonus in addition to the 10,000 points received for the qualifying lap.

Once you have qualified for the race, your car is placed in its proper position at the starting line. The race will last up to four laps (some machines limit it to three), depending on how well you do. As the starting lights count down to green, you should be in low gear with the gas pedal to the floor.

FUJI SPEEDWAY
1LAP 2. 709mi.

START

© ® 1982 ATARI INC.

SCORE 10800   74   SPEED   33mph

START

As you accelerate away from the starting line, shift into high gear at around 100 mph. You should then stay in high gear for the entire race, unless you crash and need to start again. Try to move out in front of the pack before the first turn; if you started in back, pass between the cars in front of you.

Go into the first turn on the left side of the track and then cut to the inside. With perfect timing, you can take the first turn at full speed without skidding. As you come out of the turn and pass the Namco sign, you'll see cars ahead of you. Pass them on the shoulder if necessary, but don't slow down.

Next is a sharp right turn marked by a Dig Dug sign, off the left side of the track. Stay to the left so you can prepare for the hairpin turn which follows immediately. It's too sharp to take at full speed, and there are usually other cars in front of you. The best way to take the turn is to cut the corner by driving off the left side of the track, being careful not to hit the Pole Position sign on the left shoulder. If you have trouble with this, the next best approach is to let up on the gas and stay on the road. Never shift to low gear or use the brakes, but you must slow down if you stay on the road; otherwise, you'll slide off the track and hit the Centipede sign on the right side.

The next part of the course is a long, sweeping right turn flanked by numerous signs and billboards. Stay as far to the inside as possible so you can see more of the track in front of you and avoid blind crashes. A Pole Position sign on the right will mark the start of the final straightaway into the finish line.

The entire time you're racing, a timer is counting down how many seconds you have left. If you reach the finish line before your time runs out, you're awarded an additional 45 seconds of racing time to try to complete another lap. You'll continue racing until you fail to complete a lap in the allotted time or you complete the maximum number of laps (3 or 4, depending on setting).

Whenever you play, strive for the perfect game: starting in pole position and driving the entire race without crashing. It takes precision driving and fast reactions, but it can be done. And if you get off to a bad start, try a slow trip around the track to read the colorful road signs — they're hard to appreciate at 185 mph.
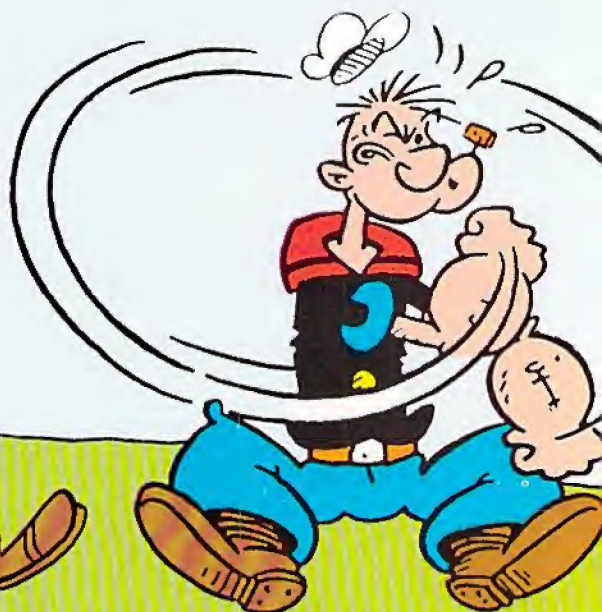
SCORE 15800   43   SPEED 125mph

SCORE 19190   16   SPEED 186mph

I YAM WHAT I YAM
POPEYE
THE VIDEO GAME
by Tad Perry

The game of Popeye is an animated competition between Popeye The Sailorman and Brutus (the fat slob who looks like an arcade owner). Both of them are vying for the attention of the thin and lovely Olive Oyl. You control Popeye with a four-direction joystick and punch button, and must avoid Brutus and the Sea Hag while proving your love for Olive Oyl.

On the first screen, Olive Oyl stands at the top of the screen and tosses hearts down to the bottom, hoping that Popeye will catch them all. If a heart reaches the bottom of the screen, you have about 10 seconds to pick it up before it breaks, costing you one turn. Try to catch the hearts as high up as possible, since they decrease in value as they get closer to the bottom.

If Brutus harasses you, cross through the edge of the screen from left to right and wait for him to stop directly under the bucket. Hit the punching bag at this point and the bucket will fall on his head, rendering him helpless for a while. This will give you 2000 points and some time to catch a few more hearts.

As in real life (well, cartoon life) Popeye can grow stronger by eating spinach. A red can of spinach moves between the 2nd and 3rd levels of the screen, and you can make Popeye eat it by punching the can. Popeye will then turn red and become more powerful than Brutus for about 10 seconds. If you punch Brutus during this time, he falls into the sea and you are awarded 3000 points.

Brutus will eventually recover, so make good use of this time by catching as many falling hearts as possible. They're worth twice as much when Popeye is under the influence of spinach, so catching some of the higher hearts can really help your score. And because extra turns are only awarded for a very high score (60,000 points on most machines), you should be as greedy as possible.

Spinach can only be used once per screen, and it is not restored when you lose a turn. Don't use it too early; pick up about 2/3 of the total number of hearts, and let as many hearts as possible fill the air before getting the spinach.

If you're willing to take a risk to get 4000 points instead of 2000, don't use the punching bag right away. Wait until you've punched Brutus (best done while under the influence of spinach), and then position Popeye next to the punching bag. When Brutus climbs out of the sea, he will cross under the bucket on the lowest level. With some practice and timing you should be able to drop the bucket on his head for 4000 points. Note: touching Brutus while the bucket is on his head is not fatal. But be careful, because once the bucket comes off he can easily crush Popeye.

To make up for his lumbering slowness, Brutus is capable of throwing beer bottles at Popeye. Rather than avoiding this, you should try to force him to throw bottles as often as possible (he can throw four at once), so you can punch them for extra points. Remember — it pays to be greedy in this game.

The Sea Hag can also throw bottles, although she only throws one at a time. The Sea Hag materializes on the edge of the screen for a moment, chucks a bottle, and then disappears. Oddly enough, she can be on both sides of the screen at once. So if you get caught between two Sea Hags or between Brutus and a Sea Hag, you'll have to be fast on the punch button and joystick to survive.

Play the second screen much like the first one. Although Olive Oyl is dropping musical notes now, the real difference on the second screen is the layout, with Wimpy on the plank in the lower corner. If Popeye jumps off the second level onto this plank, he will be catapulted up to the third level. With careful timing, you can even make Popeye leap all of the way up to the fourth level, where Swee Pee is waiting on a balloon platform. Touching the bottom of Swee Pee's platform will earn you 500 points (1000 points while you're under the influence of spinach).

LEVEL ONE

LEVEL TWO

LEVEL THREE

The setting for the third screen is a ship, with a sliding platform on the highest level. At the beginning of the board you should be able to slide Popeye across this platform several times, catching the letters of the word H-E-L-P that Olive Oyl is letting fall directly above.

Every time Popeye catches a letter on this screen, one rung is added to a ladder going up to Olive Oyl. When the ladder is complete, Olive Oyl is saved. This is the hardest of all the screens, because a large number of letters are needed to finish the ladder and save Olive Oyl. On all screens, Brutus can reach up from underneath or bend down from above to get Popeye. He can also bound down from higher levels to lower ones — be careful that you're not underneath him.

A buzzard will occasionally enter from the left side of this screen. While sliding back and forth across the platform, you should try to punch the buzzard as many times as possible, for 1000 points per punch.

After the ship screen, all three screens are repeated in the same order, but care must be taken because there is a new enemy to be reckoned with — deadly bouncing skulls. These skulls bounce out from the edges of the screen and must be punched while they are bouncing upward. You must also make sure that no skulls are directly above Popeye, because they drop down a level or two and hit him on the head.

Although the skulls complicate things, the basic strategies described above for the first three screens will still work. Just continue to avoid Brutus and the beer bottles, and stay greedy — it's a long way between extra turns.

THE FLEETING FAME OF THE VIDEO GAME DESIGNER by Danny Goodman

The home video game industry is often viewed as a "hits" business—as in "top ten hits of the week." Industry publications such as *Billboard Magazine* regularly chart the past week's top-selling game cartridges in the same manner as they do hit records and movies.

But successful records and movies often make media celebrities out of the performers involved in the projects—the stars. Does the same connection exist between video games and the designers who create them? Are game designers becoming superstars in their own right?

This happens to be a controversial topic among video game industry executives I've talked to. Most companies are tight-lipped about exactly who does what in the creation of a video game. Some companies won't even admit who designs their games; a few will, with coaxing, attribute a title to a single author. And then there's Activision, a company that promotes its designers in television ads as if they were rock idols.

Compared to traditional superstars, game designers are not flamboyant publicity seekers. They don't (yet) have personal press agents making sure they appear on *The Tonight Show* or the cover of *People Magazine*. Most designers I've met are softspoken individuals who are deeply involved with their highly technical work. Perhaps what makes game

designers most unique is the fact that, while other entertainment stars *perform* to a passive audience, video game superstars *produce* for an active and involved audience. Designers—experts in game playing and computers—display their virtuosity behind the scenes, dreaming of concepts while hiking in the woods or tapping computer code into an emulator. You might say that a game designer is "all the little people" behind a hit, rolled up into one talented individual.

However, while they may keep a low profile, the industry's top designers earn salaries worthy of any superstar. Wages as high as $100,000 per year have been reported, and nearly every company has an incentive plan on top of that. For example, some designers receive bonuses based on the sales of their cartridges. And others receive stock interests in the multi-million dollar companies they work for. One game firm even gives a company car and a promotion to designers who complete their first marketable product.

While a designer's work is not exactly glamorous, it's not a corporate "whip and chains" scene, either. Designers work long, odd hours doing something they really enjoy—playing and creating games. I have yet to meet a designer who looks at his job as a "daily grind." Most designers would be doing games in

their spare time anyway if they had to work at real jobs for a living.

One reason why there aren't more "superstar" game designers today is that game design is not always a solo proposition. In most cases, a finished game is the result of the work of many people. At Imagic, for example, game designers work closely with computer graphics artists to create appealing visual screen images. By using sophisticated computerized development systems (dubbed "Picasso" and "DaVinci" by Imagic insiders), a video artist can lay out the makings of an entire game screen in a matter of hours. Music specialists, using a custom music development system (called Handel), can create tunes from electronic sheet music on-screen. The game designer, then, is the person responsible for writing the actual computer code (usually in assembly language) that makes the game do what he or she has in mind.

Within the three to six months it takes to complete a game, the whole design staff will have seen the game at all stages of development, making suggestions and criticisms along the way. As you can see, a video game cartridge is not the product of a lonely designer working in a windowless room in the middle of the night. In fact, one prerequisite for employment in many game development labs is the

ability to work well as a team member.

There are competitive reasons, too, why companies insist on designer anonymity. Foremost is the intense demand for the handful of truly gifted designers. If a company has such a genius, they're better off keeping his or her identity hidden, so that other companies won't lure the designer away. Second, some companies don't even employ game designers. Instead, they contract with outside design firms (some in the Far East) to develop their games. In these instances, the manufacturer acts much like a book publisher by only producing, packaging, and promoting the title. Such a company has little to gain by glorifying an independent designer. Finally, cartridge companies spend millions of advertising dollars to promote their brand of games among players. It's risky to drop a bundle of money to build an individual designer's reputation, only to have him defect to the "enemy" (another firm) at a later date.

Still, it's hard to keep an inventive author down. The quest for immortality has led several Atari designers to conceal their names or initials within their creations. Only the most persistent (or lucky) players ever find them, but at least these hidden monograms give the designers proof of authorship of their work.

I think this "anonymous celebrity" is what designers really seek. For instance, Activision's Steve (Megamania) Cartwright told me that he enjoys the fact that his name is known by game players, but he can still walk down the street without being identified. Yet.

Will Activision's policy of promoting its designers help turn the home video game business into an industry of celebrities? Well, I must admit that the Activision touch of picturing the author and presenting his or her strategy hints is my favorite part of their instruction manuals. It adds a warm, personal flavor that makes me want to know and like the person who developed that game. However, when it comes down to spending my hard-earned money for a game cartridge, I wouldn't automatically buy a David Crane or Alan Miller cartridge sight unseen. I'd still want to preview game play, graphics, and so on before laying down $25-35 for a cartridge.

I believe that player loyalties will eventually develop, but not behind specific designers. Only the companies that consistently produce high-quality games will earn the loyalty of the game-playing public.

COMPUTER '83

by David and Sandy Small

SYNAPSE SOFTWARE REVIEW

I first met him at the West Coast Computer Fair in March of 1982. His name is Ihor Wolosenko (how's that again?), and he is the head of Synapse Software, a firm located in Berkeley, California. At that 1982 show he was displaying some new products from Synapse, among them the games "Protector" and "Chicken."

After that meeting his name kept popping up. It seemed that everyone I talked to on the West Coast was developing a game for Ihor. One other common point popped up: those I spoke with had nothing but the highest praise for Synapse, and specifically for Ihor. A number of noted Atari game authors left their old companies to work for Ihor, among them John Harris (who wrote "Frogger" and "Jawbreakers"), and Mike Potter (author of "Protector," "Chicken," and "Nautilus"). In fact, Ihor has gathered the best collection of Atari game authors that exists today.

Recently we were given a look at Synapse's most recent games and a few of those currently under development. Ihor refers to them as the "next generation" of Atari software. The preview was awesome. We left with the feeling that other Atari game developers might as well hang it up when the new games hit the market; Synapse is far, far ahead.

Here's a look at their current line of products.

SHAMUS

In this game, you are the Shamus (which is an old term for detective), making your way through a maze. You are given an aerial view of the maze, as you work through it one room at a time. Inside these rooms are a number of particularly nasty opponents, dedicated to preventing you from making your way through.

You maneuver your Shamus with the joystick, and throw "shivs" at the opponents by pressing the fire button. If you hit the opponent, he disappears; there are usually ten to twenty in a given room.

You have three lives to begin with. Anytime you touch a wall, an opponent, or one of the opponent's "shivs", one of your lives is lost. But don't despair; you can find more lives in the various potions that lie within the maze. Also to be found are the keys to various doors which, if opened, reveal deeper parts of the maze. The keys are color-coded with the doors they open.

Let's assume you somehow manage to get rid of all your opponents in a room. You have very little time before a dreaded warning tone sounds, and the Phantom comes bouncing into the room. You can't destroy the Phantom; a shiv will merely stun him momentarily. He usually ends up chasing you out of the room. This little touch ensures that you never

have a moment to rest after clearing out one room.

The ultimate goal of this game is to reach the very lowest level of the maze, which involves making your way through endless rooms, finding keys, and opening many doors. (All of this must be done in a particular order, so you will find it necessary to make a map.) At this lowest level, you can shoot and destroy the Phantom to win the game. This is an accomplishment similar to running up twelve million points on the coin-op Defender, reachable only by those with hyperkinetic reflexes.

PROTECTOR

In this game, you are the Protector of a number of people trapped in a city. Life in the city has taken a turn for the worse: aliens have shown up. No, these aliens aren't good guys like E.T. In fact, the alien ship is beaming up the humans, one by one, and (good heavens!) dropping them into a volcano. (And yes, the people sizzle when they hit the lava, with a ghastly sound like bacon frying.) You can't shoot down the alien ship, so your job, as Protector, is to transport the humans, one at a time, to a new city some distance away. You are racing the alien ship to see how many humans you can save.

Once you get them to the new city, safe from the aliens, you will find your problems have just begun. The volcano erupts, and the new city is suddenly

engulfed by lava. Only one escape route exists; you must pick up the inhabitants once again and carry them to the escape shuttle, dodging falling meteors and force beams. It is all quite difficult and challenging.

You are given a side view of this situation, complete with mountains, your ship, the people, and various harassing alien craft. Your joystick maneuvers you up and down, or to either side; the game scrolls right or left, bringing new terrain into view if you run near the edge of the screen.

Protector is a game you'll find in most Atari gamers' libraries. Give it a try, and see if you can prevent yet another inhabitant from being volcanically french fried.

NAUTILUS

This game represents a new idea from Synapse. It is a two player game, with half of the TV screen being devoted to one player, and the other half to the other player. In this case, one player is operating a destroyer, laying depth charges, and the other a submarine, trying to get rid of an underground city being defended by the destroyer. Each player is given a side view of the proceedings which scrolls smoothly in all directions.

The view below the water's surface is a sightseer's paradise. First, there is the sub, then underground cities, fish swimming
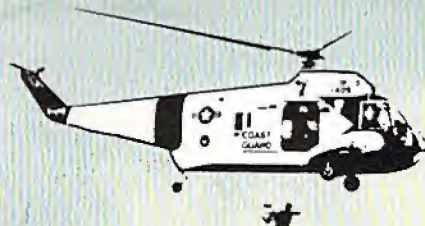
around, heat seeking torpedoes, and the ever-present depth charges falling on the sub. To top things off, there are a number of underground caves you must maneuver through without crashing into the walls.

The view on top is a typical sunny Atlantic day. The destroyer makes regular trips back and forth, dispatching maintenance crews for the underwater city that the submarine is busily destroying. There are also helicopters that attempt to bomb the ship, but that's all part of a destroyer captain's life, right?

Nautilus is a lot of fun for two people to play, and quite competitive. (All alone? Then there is a mode where the computer will play one player's ship/sub, and quite competently to boot.) The graphics and sound are well done and typical of Synapse games. Give it a try.

PICNIC PARANOIA

Remember your last picnic? Sure, it was a great time; the sun, eating lunch out on the grass, maybe playing softball. But, come to think of it, there were a few problems — the ants. They got into everything, and by the time they were finished, they had eaten more of the lunch than we did. Sound familiar?

Then you are all set for Picnic Paranoia. In this game, you must defend your picnic lunch from a troupe of invading bugs, armed only with a fly-

swatter. The ants show up, march across the screen from all directions, and mass behind one particular food item; then they "heave ho" together and push the food completely offscreen (munch, munch). Then, a wasp shows up, and if you don't swat him exactly right, you'll get stung and lose a few seconds. Finally, spiders spin webs to entangle and slow you down. It's (I can't resist) no picnic.

The sound effects and graphics are wonderful. There's the steady march of the ants, the swat-swat of your flyswatter, and the occasional buzzing of wasps.

If you can somehow defend your food for a set amount of time, you complete a round. (In the two player version, you take turns with another player). You are awarded points based on the amount of food left after each round.

Picnic Paranoia offers real challenge and is hysterical to play; everyone has been on a picnic and experienced what this game is all about. It is definitely worth picking up for your Atari.

FORT APOCALYPSE

Fort Apocalypse is not yet available in a final production version; perhaps by the time this is printed it will be in the stores. However, it was one of the games we previewed at Ihor's place.

Fort Apocalypse is to Choplifter what Super Breakout is to Pong. This is an extremely souped-up helicopter simulation, with the helicopter descending underground through an incredible variety of obstacles. Force screens blink on and off, entire areas of unstable matter flicker in and out of existence, and a variety of enemy devices shoot at you. This game has the calm, steadying demeanor of rush hour traffic.

The controls and helicopter simulation are even more exacting than Choplifter. Gravity has been added; you must apply enough power to the chopper to keep it steady in mid air. (Just learning to fly the helicopter is a challenge). Thankfully, your craft is also equipped with a number of weapons to help subdue the enemy.

Look for Fort Apocalypse to be one of the bestsellers for Atari as soon as it is released. The graphics and special effects are stunning; if you liked Choplifter, you'll love the Fort.

A FINAL GAME

Imagine yourself flying above the terrain, looking out the pilot's window. You have a 3-D view of the ground beneath, fading away to the horizon. Enemy positions move about on the ground, firing their anti-aircraft guns upwards at you. Enemy planes are in the sky with you; you have to keep a sharp eye on them, lest they turn and attack. The terrain changes with your every bank and turn; the sensation is frighteningly close to that of flying a real plane.

I don't know the game's name (it had not even reached that point when I saw it), but it is coming soon from Synapse. Look for it!

There is hardly enough space to review the balance of the other games from Synapse, such as Slime, Reptilian, or The Necromancer. And by this time next year, the number of games will probably have doubled, as the new generation of Atari games reaches the market. Synapse is a great success and all the signs point towards that success continuing.

THE HOME FRONT

by Jim Gorzelany

We've got a lot of games to catch up with this time 'around. So, without further adieu, in alphabetical order, this issue's picks and pans...

BERMUDA TRIANGLE
Data Age, Inc. for Atari 2600
★★

You're the captain of a mini-submarine on an undersea archeological expedition in this soggy Defender variant. You maneuver your ship through a horizontally scrolling underwater playfield that is filled with dangerous obstacles—squids, man-eating sharks, and undersea mines. You must avoid colliding with these obstacles and blast them for points while you attempt to collect the artifacts that are situated at the bottom of the sea. Unfortunately, the sum of these elements is neither exciting nor entertaining. The graphics are only fair, and your adversaries don't put up much of a fight. What's more, you have limited control over your ship—you can only travel from left to right across the playfield, whereas your opponents can enter the screen from either direction. *Bermuda Triangle* really has nothing to do with the mystery behind the real-life Bermuda Triangle. It's just another below-average shoot-em-up game that ends up all wet.

CENTIPEDE
Atari, Inc. for Atari 5200
★★★★★

One of the most popular arcade games of all time finally comes to home video via the Atari 5200 system in one of the best replications to date. *Centipede* for the 5200 is, well, Centipede... exactly. The cast of crawly characters—centipedes, fleas, spiders, and scorpions—look and behave exactly like they do in the arcade version. The graphics are the same, the game sounds are the same, the action is the same—what else is there to say? You'll be able to play Centipede with Atari's track-ball accessory when it's available later this year, although the 5200's 360-degree joystick is more than adequate. Your bottom-screen cannon zips across the screen with the fluidity of a track-ball. The game contains three difficulty options, but even the "easy play" mode is challenging. What's more, your best arcade Centipede strategies can work just as well at home as they do in the arcades. If you own a 5200 system, you won't want to be without this game.

DRAGONFIRE
Imagic, Inc. for Atari 2600 and Intellivision
★★

In *Dragonfire*, you control a handsome prince who must collect treasures while contending with the fire-breathing dragon who guards them. You must first run across the long bridge that leads into the castle while ducking under or leaping over the dragons' fireballs that fly in your path. Once you've entered the castle, you must grab a series of prizes—goblets, lamps, jugs, etc.—that are scattered throughout a treasure room. While doing this, you must dodge fireballs being shot up at you from the dragon, who scampers back and forth across the bottom of the screen. Once you've collected all the treasures, you must escape from the treasure room and do it all over again, crossing another bridge, grabbing more treasures, and so on. Despite the impressive graphics and relative difficulty of play (especially in higher levels), Dragonfire is not very exciting. It's too repetitious to warrant extended play and not amusing enough to make it on entertainment value alone. It's more draggin' than it is fire.

EGGOMANIA
U.S. Games for Atari 2600
★★★

In this amusing, cartoony version of Kaboom, up to four players take turns controlling a bottom-screen bear who must catch wave after wave of falling eggs in his hat. The eggs, you see, are being hurled by a goofy-looking turkey who trots along the top of the screen. If you miss the eggs, egg yolk begins to fill up the bottom of the screen. When the bear is completely buried in yolk, the game is over. However, if you successfully catch all of the projectiles in a wave, you get the opportunity to throw the eggs back at the turkey for bonus points. If you hit the turkey, he'll lose his feathers (did you know that turkeys wear polka-dot boxer shorts underneath their feathers?) and flap off of the screen. While *Eggomania* is not as challenging as Kaboom, Eggomania's animation and music (check out the turkey as he dances to the "Blue Danube") are among the funniest in home video. A good family game that's a yolk-a-minute.
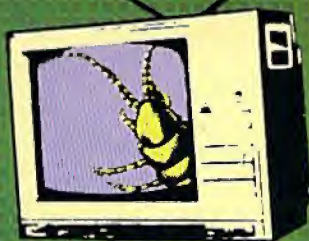
ESCAPE FROM THE MINDMASTER
Starpath Corp. for Atari 2600 with Supercharger
★★★

In *Escape from the Mindmaster,* you must travel through a series of three-dimensional mazes while performing various tasks, such as matching strangely shaped objects with their proper holes.
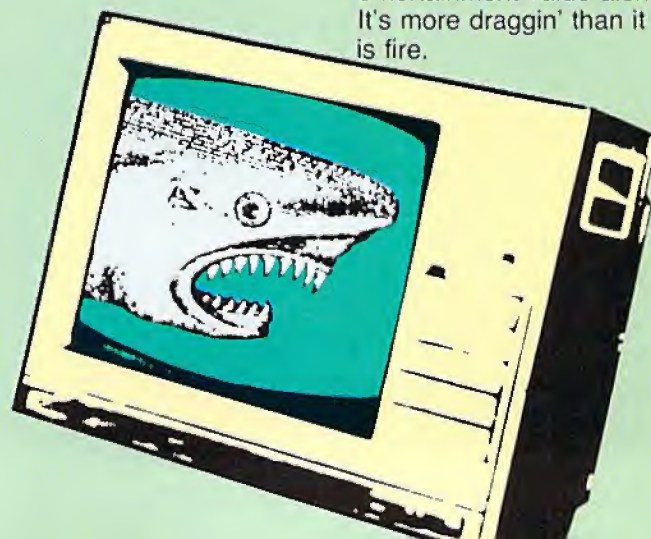
There are other "games within a game" that will test your intelligence, memory, coordination, and reflexes —sort of like a video I.Q. test. And to thwart your efforts, each maze is also occupied by an attacking alien stalker. After completing each level of the game, you advance the supercharger game cassette tape and load the next level of play into the VCS. There are a total of six different mazes in this one-player game. The three-dimensional aspect of the game is nice—the maze approaches or recedes in perspective as you maneuver through it. If you're a hard-core video action addict, you might find Escape from the Mindmaster a bit slow for your tastes, but, if you like mental challenges, this is the game for you.

FIREWORLD
Atari, Inc. for Atari 2600
★★
Part two of the four-game "Swordquest" series picks up where the first game, Earthworld (reviewed in the last issue of JoyStik) left off. As before, you must travel through a series of ten rooms, pick up certain objects (a shield, a grappling hook, and a dagger) and use them in your quest for the "sword of ultimate sorcery." Once again, you must participate in a number of action sequences along the way—dodging deadly snakes or flaming firebirds as you cross the screen. But Fireworld never quite makes it as either a strategic adventure game or a more-traditional action-packed video encounter. The graphics are better than they were in

Earthworld, but the same degree of monotony prevails. If you like Earthworld, you'll certainly want to purchase this cartridge. Otherwise, spending $20-$30 to play with Fireworld will surely get you burned.

GOPHER
U.S. Games for Atari 2600
★
In Gopher, you control a farmer who must protect his carrot crop from two pesty gophers, who tunnel up to the surface of a garden in order to steal the carrots. You score points by filling in the gophers' holes and by bopping them back into the ground before they escape to munch your crop. Occasionally, a duck will fly overhead and drop a seed, which you can plant to replace any eaten carrots. Aside from the cute "Turkey in the Straw" musical accompaniment, this game is neither exciting nor entertaining. The graphics are mediocre— the farmer looks good, but the gophers look more like fish than rodents. We recommend that you "Gopher" another game.

JOURNEY ESCAPE
Data Age, Inc. for Atari 2600
★★★
In Journey Escape, the world's first rock 'n roll video game, you must guide each of the five band members across a horizontally scrolling playfield to reach the Journey Escape vehicle in one minute or less. Along the way you must avoid a host of post-concert obstacles, such as shifty-eyed promoters, love-crazed groupies, pesty paparazzi

photographers, and stage barriers. The graphics are nice (especially against the scrolling starlit background), the band members are easy to control, and the musical accompaniment is amusing (if you like the tune, "Don't Stop Believing"). Unfortunately, the game is relatively easy to master and the difficulty level resets after the fifth wave. However, it's still a fun game; if you're a true Journey fan, you'll certainly like Journey Escape. Crank up the volume and enjoy.

M.A.D.
U.S. Games for Atari 2600
★★
M.A.D. is a tired spinoff of Imagic's popular Atlantis cartridge (which was itself a spinoff of Atari's popular Missile Command cartridge). Your objective is to defend six bottom-screen energy stations from battalions of falling kamikaze jets and helicopters. You control a photon cannon at the bottom-center of the screen and can fire in seven different directions at your enemies. Unfortunately, the game is slow, sluggish, and awkward to control. It features neither the playing excitement nor the interesting graphics of Atlantis or Missile Command. The two-player, head-to-head variation is a bit better, but otherwise the game is M.A.D.deningly dull.

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Ratings:
★ ★ ★ ★ ★  terrific
★ ★ ★ ★  great
★ ★ ★  good
★ ★  poor
★  yucch!
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MINES OF MINOS
CommaVid, Inc. for Atari 2600
★★
In Mines of Minos, you control a robot who must evade and destroy attacking monsters in five maze-like mines as you collect parts with which to build spare robots for extra lives. You win the game by destroying the three stationary monsters that guard the command center in maze level 5. Mines of Minos is an unfortunate example of a good idea that was poorly executed. The graphics are bland and blocky, and are reminiscent of some of the first-generation Atari cartridges. What's more, your robot is slow and frustratingly difficult to maneuver through the maze turns— even if you're using one of the new "premium" joystick controllers. While there are a few nice touches, such as the vertically scrolling aspect of the maze/playfields and the water that gradually fills the screen as the game progresses, they're probably not enough to hold your interest through repeated plays. Too bad, because it could have been a better game.

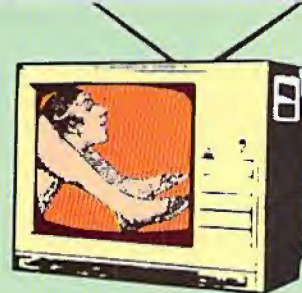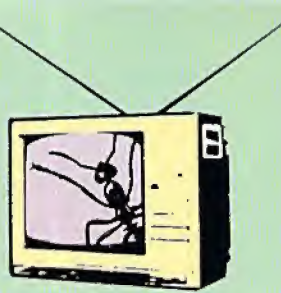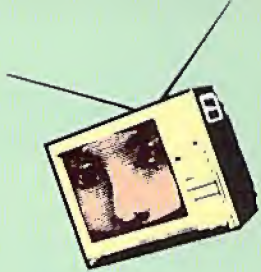### MS. PAC-MAN
Atari, Inc. for Atari 2600
★★★★★
As the clever advertising campaign suggests, Ms. Pac-Man is indeed "more than Pac-Man with a bow." Ms. Pac-Man challenges you with four different bright-colored mazes, each with its own traps and escape tunnels. Overall, the game looks and plays much like the arcade original. The four ghosts who pursue you each appear in

a different color, have distinct personalities (the red ghost is the fastest and smartest of the group), and don't seem to follow predetermined patterns. Also, the various bonus treats —cherries, pretzels, bananas, etc.—march through each maze periodically, just like they do in the arcades. While the four mazes aren't *exactly* the same as in the coin-op original, they're fairly close and very challenging. What's more, this one-player game includes many nice subtleties that could just as easily have been excluded from the cartridge. For example, Ms. Pac-Man sports her famous bow, the ghosts move faster and stay energized for shorter periods of time as the game progresses, and there's even an end-of-game cartoon. Atari's designers finally appear to have vindicated themselves from the sorry mess they made with last year's disappointing Pac-Man cartridge (currently used as a door-stop in many households). Ms. Pac-Man is a must for your home-video library.

NIMBLE NUMBERS NED
N.A.P. Co. for Odyssey2 with voice module
★★★★

Nimble Numbers Ned is a fine educational game designed for youngsters aged 6 to 10. The player controls the title character who must leap over a series of rolling barrels (Donkey Kong-style) as he crosses a field of numbered stones. If the player successfully leaps over all of the barrels, the voice module will ask him

or her a series of questions in one of three preselected categories: multiplication, simple algebra, or shape recognition. The Odyssey voice module literally "talks" the player through the game. It reinforces correct answers, and encourages youngsters to reconsider wrong ones. All in all, this cartridge demonstrates the most effective use of the Odyssey2 keyboard since the famed "Master Strategy" series of games last year, and represents the best use of Odyssey's voice module to date.

PHOENIX
Atari, Inc. for Atari 2600
★★

Atari's *Phoenix* cartridge represents an effort that is, regrettably, too little too late. It is too little in the sense that much of the challenge of the arcade original has been lost in this one-player adaptation. The four waves of birds that flap and fly in zig-zag fashion across the screen are relatively easy to eliminate if you're at all familiar with this type of bottom-shoot game. The Phoenix ship that descends upon you after every fourth wave likewise offers little resistance to an experienced gamer. An all-too-handy protective force field makes the game even easier. Phoenix is too late in the respect that a far superior and much more complex home version already exists in Imagic's dynamic Demon Attack cartridge. Strictly for the birds.

PICNIC
U.S. Games for Atari 2600
★

Rather than defend cities from nuclear attack, you must defend your lunch from hungry insects in this overly simplistic video battle. In *Picnic*, a series of flies buzz down towards two cheeseburgers; you must nail them with your bottom-screen fly swatter. If they happen to land in the center-screen fly trap, you earn bonus points. Picnic is occasionally amusing, and is nicely controlled with the Atari paddles, but it rarely provides much entertainment or challenge. Its primary appeal will probably be to younger players; serious gamers will all too easily be able to make the flies buzz off.

P.T. BARNUM'S ACROBATS
N.A.P. Co. for Odyssey2
★

The latest action game cartridge for the Odyssey2 system, unfortunately, does not not live up to the promise of recent releases such as Freedom Fighters, K.C.'s Krazy Chase, and Attack of the Timelord. *P.T. Barnum's Acrobats* is an Odyssey2 version of Atari's popular Circus Atari game. In it, you must bounce two clowns off a slantboard into the air to pop three rows of brightly colored balloons. This game suffers from difficult and imprecise joystick action. The cartridge is "voice enhanced," and can be played using the Odyssey2 voice module. All you'll hear, however, are random vocal taunts and encouragements—the same ones that appear in most of the Odyssey2 voice

games. A lackluster effort at best.

REACTOR
Parker Bros. for Atari 2600
★★★★

In *Reactor*, you must destroy wave after wave of atomic particles gone amok as you attempt to prevent a meltdown in an overheated nuclear power generator. To destroy the renegade positrons, neutrons, and neutrinos you must "bounce" them into the deadly outer walls of the reactor for points. Throughout each attack wave, the solid nuclear core at the center of the screen expands, gradually reducing the "safe" areas on the screen. In later waves, the core turns into a whirling vortex that will threaten to suck you into an atomic oblivion. The graphics and sound effects are nice, but are not nearly as complex as they were in last year's arcade version of the game. No matter, Reactor is an exciting and maddeningly difficult game to master. Strategic restraint, rather than reckless abandon, is the key to high scores here. An original concept in a world of video copycats.

RIVER RAID
Activision, Inc. for Atari 2600
★★★★★

In *River Raid*, you control a jet fighter flying through a series of treacherous river channels. Along the way you must blast and/or avoid a host of obstacles—helicopters, ships, jets, and so forth. You must avoid hitting the sides of the narrowing channels, blow up
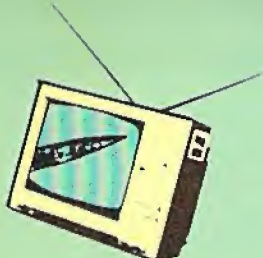
bridges in your path, and keep a watchful eye on your fuel tank as you battle the enemy. River Raid is Activision's best action game cartridge to date. The graphics are nicely detailed and the audio effects are convincing, yet not overwhelming. Your jet is easy to control (it even banks realistically), and the game's level of difficulty builds at a sure and steady pace. River Raid is a challenge even in the early stages of the game. Original, addictive home-video action.

SOCCER
Atari, Inc. for Atari 5200
★★★★
The world's most popular sport is nicely brought to the home screen in this realistic and complicated Atari 5200 cartridge. The playfield is three-dimensional, the graphics are detailed (you can see the spin on the ball as well as its shadow), and the rules closely approximate those of international soccer. 12 buttons and a joystick are used to control the teams, but if you're accustomed to Intellivision-type sports game controls, this won't be much of a problem. *Soccer* can be played in any of four difficulty levels for games lasting between 10 and 90 minutes. You can play solo against the computer or against a human opponent. A few peripheral touches such as crowd reactions could have been added to embellish the game, and it's a minor disappointment that the computer always controls the goalies, but it's a World Cup-class cartridge nonetheless.

SPIDER FIGHTER
Activision, Inc. for Atari 2600
★★★
Spider Fighter is a better-than-average bottom-shoot game that somehow looks like it should be more difficult than it is. You must blast an array of arachnids before they steal three pieces of fruit that are positioned at the upper right-hand corner of the screen. Mercifully, you are given unlimited, machine-gun like firing that effectively blows your opponents off of the screen with little effort. If your cartridge library is already overstocked with bottom-shoot alien attack games, you might find the basic concept of the game all-too-familiar. Nonetheless, Spider Fighter is a fast-moving, exciting game with entertaining graphics. It spins a web that's easy to get caught up in.

SQUEEZE BOX
U.S. Games for Atari 2600
★
You control a pistol-toting convict in this claustrophobic variation on the basic "Breakout" game theme. In *Squeeze Box*, you must blast away at six color bars block by block as they slowly close in on you from both directions. Touch one of the bars and you "fry," thereby losing a life. The graphics are blocky, and your convict's gun is frustratingly difficult to control. After you've lost all of your lives, you can assume that you've finally been executed for your crimes. The screen explodes into a final cartoon in which your jailbird is transformed into a devil who dances gleefully atop searing flames. A

tasteless ending that, like the game, will burn you up.

STAR WARS JEDI ARENA
Parker Bros. for Atari 2600
★★
In the latest Star Wars-theme game from Parker Bros., you and your opponent (human or computerized) battle each other to the death with lightsabres in the famed Jedi Arena. Unfortunately, you never get to actually duel it out one-on-one with your opponent. Both warriors are in fixed positions at the top and bottom of the screen. A small, satellite-like "seeker" flies randomly through the arena. Each player uses his or her lightsabre to aim the seeker's lightning bolts at the other warrior. The graphics are colorful and the audio effects are among the best ever created for the 2600; unfortunately, the rest of *Star Wars Jedi Arena* is not as exciting. You never really get the feel of being part of the action because of the indirect-combat nature of the game. A forced effort at best.

TURMOIL
Fox Video Games for Atari 2600
★★★
In *Turmoil*, you control a vertically moving center-screen spaceship. Bizarre assortments of aliens zoom towards you in seven lanes of horizontally moving traffic. You must blast wave after wave of them as they appear on the screen; if one of them crashes into you, you lose a life. Sounds easy, doesn't it? Well, it's not. For all its simplicity,

Turmoil is a fast-moving, highly challenging game, particularly in later attack waves where the lane barriers periodically disappear. The game also features some nifty touches not usually seen in 2600-series games. For example, the game action can be frozen during play through use of the color/black-and-white switch. Turmoil will certainly give you sore thumbs and wrists and provide you with your money's worth of action long before you're tired of it.

VANGUARD
Atari, Inc. for Atari 2600
★★★★
In *Vanguard*, you control a spaceship flying through seven individual sections of a tunnel filled with alien obstacles. Some of the obstacles come at you head-on, others attack from the side; some try to ram your ship, others fire missiles at you. Along the way, you must also avoid crashing into narrowing passages, maneuver through forcefields, and avoid moving barriers. At the end of each series of sections, you must battle the keeper of the tunnel—the Gond. Based on last year's arcade game, Vanguard is an exciting home-video encounter. Your spaceship can move and fire quickly in four directions; both functions are easily controlled by a joystick (for best results, use one with a large "red ball" grip on the top). The graphics are simple, but effective, and the game play often gets truly blistering. A winner.

TECHNOCRACY

HAND-HELD CARTRIDGES

Palmtex, a leading manufacturer of hand-held electronic games, has announced a major breakthrough in hand-held games: interchangeable cartridges. The Palmtex PVS, scheduled for release this May, will be the first hand-held game that can play games stored on cartridges.

The basic unit resembles a cosmetic compact case when closed. It hinges open to reveal the liquid crystal display screen and push-button controls. The difficulty of game play is adjustable, and the suggested retail price is $29.95.

Five game cartridges will be available: Crystals of Morga, a fantasy game with 49 different mazes; Spellbound, a word scramble game; Star Trooper, a shoot-em-up space game; Mayday!, a coastal defense game; and Mine Field, a hidden danger suspense game. The cartridges have a suggested retail price of $19.95.

VOICE RECOGNITION

Milton Bradley, the well-known manufacturer, has started work on a human voice recognition unit for the TI-99. The device will not only allow TI-99 owners to talk to their computers, but it will allow the computer to respond in a synthesized human voice. It will come complete with 64-position keypad, joystick, and a headset microphone.

Although much research has been done in the area of computerized voice recognition over the last few years, this will be the first time it is available on a popular home computer. Game cartridges—which will be available|soon—should prove to be a very popular application of this new technology.

FROB-ING FOR FUN

A California company, by the name of Frobco, has recently made it possible for serious programmers with a yen for gaming to develop their own game cartridges for the Atari VCS. To transform your game ideas into working prototypes, you'll need an Apple II computer, an Atari 2600 VCS, and Frobco's FROB-26 Game Development System.

Basically, the FROB-26 consists of a plug-in peripheral card that's inserted into the Apple, and a relatively complex software package. The card enables the programmer to develop and store the code needed to generate an actual game program. A cable connects the card to the cartridge port of the VCS and allows you to play your own game as if it were a normal game cartridge.

The software package included with the system gives amateur game designers three separate capabilities. The first part of the package, called the FROB-MON, is a debugging tool used to view changes in the program as they are made. A second feature, the EXPLORER, is used to experiment with the audio/visual special effects of the VCS. The third feature of the software package is a set of subroutines that enable you to store and access your game program via the Apple's floppy disk.

Also included in the system are two cartridge adapters for prototype production, and a FROB reference manual.

Keep in mind that the FROB Game Development System is not for beginning hackers. It carries a suggested retail price of $495 and requires a healthy knowledge of computer programming to use.

Frobco also offers an adapter package that allows the FROB-26 to be used with the Atari 5200. This unit, called the FROB-52, retails for $195.

MORE SETTINGS FOR ARCADE GAMES

Just to keep you up to date, here are the operator accessible settings for the latest games to reach your local arcades.

Arcade owners can set the difficulty of Atari's Xevious at four different levels: easy, average, hard, or expert. The game comes from the factory set on "average." The number of turns you get for your quarter (or token) can be set at one, two, three, or five (factory setting is three). And the bonus level for this game can be set at any of 15 different point values.

Nintendo's newest game, Popeye, has a variable difficulty setting of zero to three (factory setting of zero). You can receive up to four Popeyes per play, and the number of points required for a bonus life can be set at 40,000; 60,000; 80,000; or no bonus.

Sega's newest game, Star Trek, also has similar settings. Difficulty of game play can be set at easy, medium, hard, or tournament levels. You can be given up to four photon torpedos. And a bonus play can be given after 10,000; 20,000; 30,000; or 40,000 points.
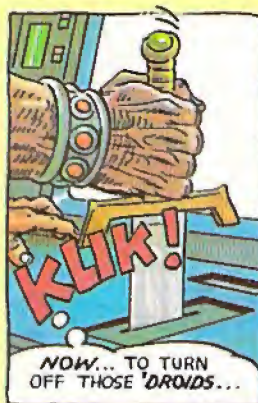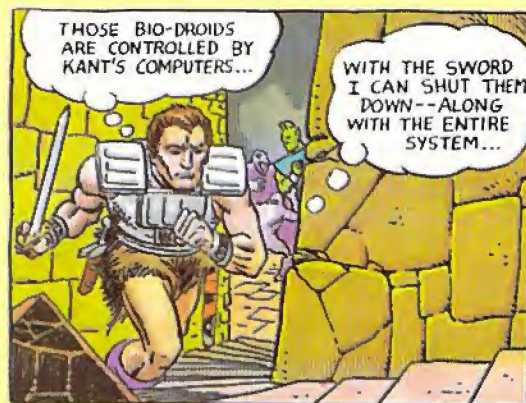
JOYSTIK CHARTS

The list grows longer and the scores grow higher! Send your high scores to the Twin Galaxies International Scoreboard: 226 E. Main Street, Ottumwa, Iowa 52501. Please include a signed verification of your score(s) from the owner or manager of the arcade in which the score was achieved. Also, be sure to include the bonus and difficulty settings from the machine you played, and any comments you wish to make about the game.

Game	Player	High Score	Date	Arcade Location
Alpine Ski	Eric Olofson	500,774	11/23/82	Earth Station: Antioch, CA
Amidar	Joel Barrett	18,201,100	8/13/82	Pot of Gold: Kenosha, WI
Ant Eater	Tracey Miller	171,110	2/19/83	Bun 'n Games: Kenosha, WI
Asteroids	Leo Daniels	40,101,910	2/6/82	Ocean View Corp.: Carolina Beach, NC
Asteroids Deluxe	Leo Daniels	2,269,230	5/3/82	Light Years Amusement: Wrightsville Beach, NC
Baby Pac-Man	Don Barclay	2,037,342	3/1/83	Nacogdoches, TX
Battle Zone	Steven Ritger	7,045,000	1/29/83	Time Out: Springfield, VA
Berzerk	Joel West	119,340	11/9/82	Twin Galaxies: Kirksville, MO
Black Hole	Brian Cox	2,807,010	7/4/82	Star Castle: Smithfield, RI
Bosconian	Ken McLeod	2,913,510	2/24/83	Quinpool Amusements: Nova Scotia
Buck Rogers	Robin Bowman	245,821	1/28/83	Mr. Bill's: Moscow, ID
Burger Time	Chuck Coss	4,163,250	1/27/83	Aladdin's Castle: Steubenville, OH
Centipede	Darren Olson	15,207,353	10/15/82	Reflexions: Calgary, Alberta
Dark Planet	Scott Young	7,302,100	3/6/83	Another Galaxy: McHenry, IL
Defender	Joe Carson	75,865,365	1/16/83	Sandy's: Cheektowaga, NY
Donkey Kong	Steve Sanders	3,165,300	10/2/82	Fun Factory: Kansas City, MO
Donkey Kong Jr.	Matt Brass	951,100	1/20/83	Montana State U.: Bozeman, MT
Frogger	Mark Robichek	442,330	8/30/82	Phil's: Lakewood, CA
Galaga	Mike Lynn	12,753,570	12/29/82	Outer Limits: Durham, NC
Galaxian	Chip Davis	367,720	1/17/83	John Brown U.: Fayetteville, AR
Gorf	Jason Smith	2,220,000	2/13/83	Gold Mine: Midland, TX
Gravitar	Raymond Mueller	4,722,200	12/4/83	Chuck E. Cheeze Pizza: Boulder, CO
Joust	Jerry Madsen	7,253,150	3/5/83	Star Ship Video: Upland, CA
Jungle King	Dan Cook	983,430	11/9/82	Golden Dome: Woodbridge, VA
Kangaroo	Sam Middleton	754,400	11/27/82	Aladdin's Castle: Panama City, FL
Liberator	Sean Middleton	516,130	2/4/83	Space Station: Anchorage, AK
Make Trax	Randy Bortot	1,834,660	9/1/82	The Arcade: Cambridge, MN
Millipede	Eric Ginner	1,506,684	2/9/83	Golfland: Milpitas, CA
Missile Command	Victor Ali	69,739,020	1/21/83	Cinedome 7: San Francisco, CA
Moon Patrol	Eric Ginner	740,070	11/25/82	Golfland USA: Sunnyvale, CA
Mr. Do	Scott Hunter	1,365,450	12/28/82	Game Power: Arlington, TX
Ms. Pac-Man	Mike Buck	388,190	3/6/83	Eastgate Cafe: Ottumwa, IA
Nibbler	Lee Whitney	428,830	1/27/83	Omni: Las Vegas, NV
Omega Race	Craig Nichols	2,638,800	6/6/82	Arcade Alley: Glendora, CA
Pac-Man	Doug Nelson	9,980,420	11/12/82	Fun Factory: Bakersfield, CA
Pengo	Kevin Leisner	809,990	2/25/83	Mission Control: Racine, WI
Phoenix	Mark Schreader	845,706	1/8/83	Golden Dome: State College, PA
Pole Position	Mike Klug	65,410	2/19/83	Video Paradise: San Jose, CA
Popeye	Jeff Weaver	191,040	2/18/83	Hoppin Food: Roanoke, VA
Q*bert	Chris Harvey	13,454,625	2/12/83	IGA: Gladstone, MO
Qix	Bill Camden	1,666,604	2/27/83	Galaxy 1: Lynchburg, VA
Quantum	Judd Boone	1,029,160	2/27/83	Mr. Bill's: Moscow, ID
Reactor	Todd Mayberry	369,731	2/11/83	Mack's Gold Mine: Kennett, MO
Rescue	Roddy Rodolfo	419,555	1/2/83	Putt Putt Golf: Fort Worth, TX
Robotron	Ed O'Neil	252,114,350	1/23/83	Outer Limits: Durham, NC
Satan's Hollow	Mike Ward	8,692,035	2/11/83	Odyssey: Madison, WI
Stargate	Oscar Iglesias	70,283,000	11/24/82	Mr. Video: Concord, CA
Star Trek	Robert Purser	974,475	3/2/83	Player's: Norcross, GA
Super Pac-Man	Kevin Fisher	456,190	7/11/82	Video Invasion: Dunkirk, MO
Super Zaxxon	Gary Hatt	151,100	2/27/83	Starship Video: Upland, CA
Time Pilot	John Roberts	1,892,000	2/27/83	Great Escape: Plattsburgh, NY
Tron	Bob Henry	4,313,565	2/10/83	Aladdin's Castle: Orange Park, FL
Tutankham	Paul Barrette	515,280	1/28/83	Pot of Gold: Kenosha, WI
Xevious	Kim Jackson	327,400	3/10/83	Goldie's: Seattle, WA
Zaxxon	Roger Mangum	2,326,350	12/28/82	Outer Limits: Durham, NC

AN EXCITING NEW FRONTIER IN VIDEO GAMES
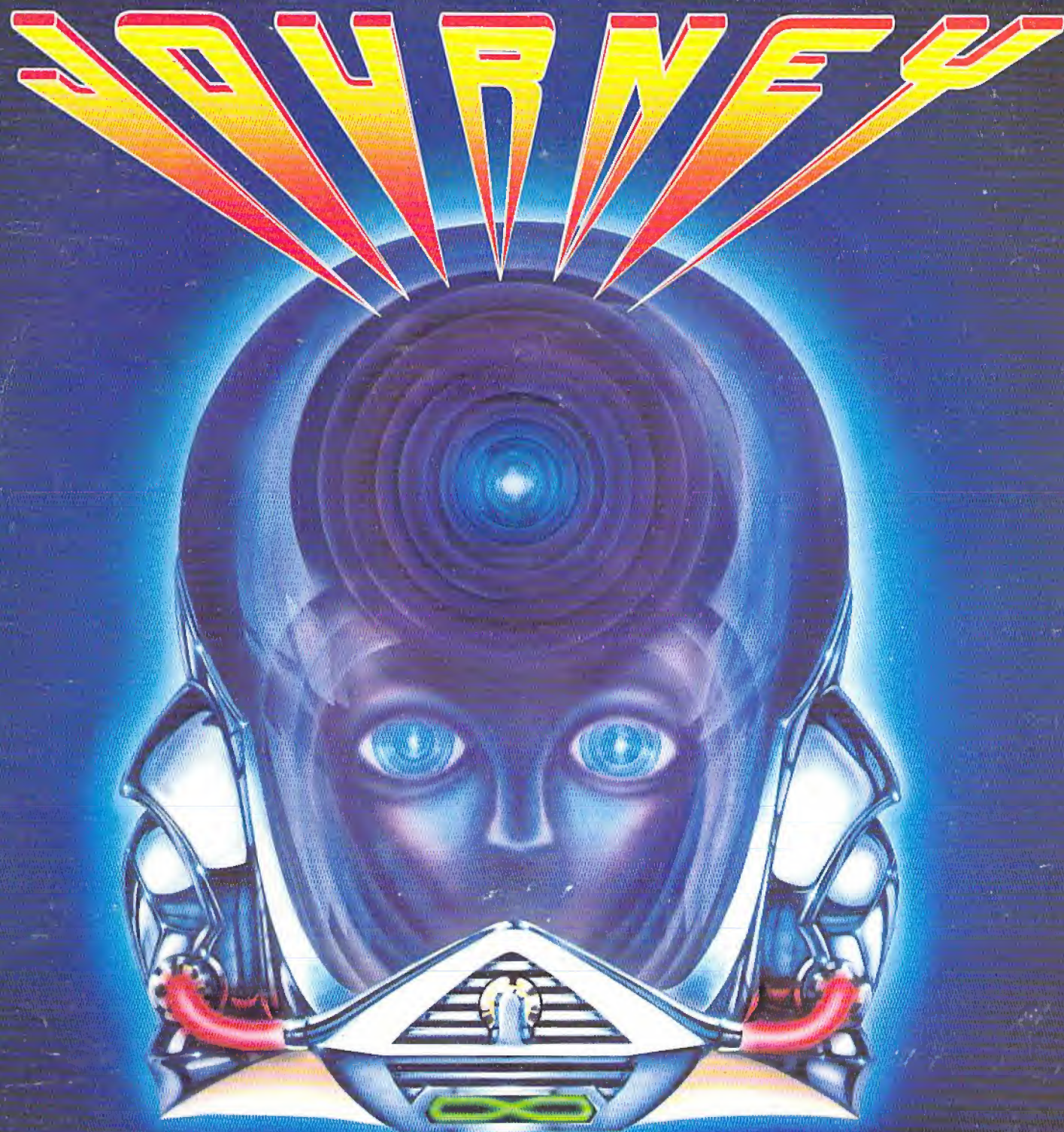
JOURNEY

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ASK FOR IT AT YOUR LOCAL ARCADE

FROM **Bally MIDWAY**

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Which player is eating twice as much?

Think fast. Here comes MS. PAC-MAN* from Atari.*

Meet the new home version of MS. PAC-MAN. She looks and plays so much like the arcade, she's unlike any home video game you've ever played before. And she's only from Atari for use with the ATARI® 2600,™ and the Sears Video Arcade† systems.

You get four ghosts. Four mazes. Escape tunnels. And lots of floating munchies. Pears to pretzels, apples to oranges. To get the top banana, worth 5000 points, you have to know

your little lady backward and forward.

The way the player on the left does. He gets 1000 points for the apple. While the player on the right gets only half as much for the orange. But plenty of indigestion.

So escort MS. PAC-MAN out of the arcade.

Because this woman's place is in the home.

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